

Astrotheology: ETI and Christian Doctrine

In 1995, Michael Mayor and Didier Queloz announced that they had discovered a planet orbiting another star, 51 Pegasi, like our own¹ – an epochal moment indeed in modern science. Since then, the number of ‘exoplanets’ has grown steadily. On 17 April 2014, the Kepler Space Telescope announced the discovery of the first Earth-like planet, Kepler-186f.² On 25 October 2021, *The Extrasolar Planets Encyclopaedia* listed 4,846 planets distributed across 3,582 planetary systems.³ With so many exoplanets already discovered in our Milky Way, some scientists extrapolate that the majority of stars in our galaxy – not to mention the universe – may have planets on which life may have evolved. As theologian Andrew Davison has observed, ‘this is evident in the shift in scientific studies in recent decades in the direction of thinking about the universe as a whole as a place where life can evolve and flourish.’⁴

Indeed, the vastness of the universe itself is sufficient reason for many to conclude that the possibility of extraterrestrial life should not be discounted. According to our best scientists, the universe is about thirteen and a half billion years old. It is more than ninety billion light years⁵ across. The renowned American science writer Timothy Ferris describes the vastness of the universe thus:

Were the Sun a grain of sand, Earth’s orbit would be an inch in radius, the solar system the size of a beach ball, and the nearest star another grain four miles away. Yet even on that absurdly compressed scale, the Milky Way galaxy would be a hundred thousand miles wide.⁶

Our galaxy – the Milky Way – contains about two hundred billion stars (200,000,000,000). Scientists postulate that there are around 125 billion galaxies, with each estimated to have billions of stars. If the Milky Way has the average number of stars in a galaxy, the universe would have some 25 sextillion or 25 billion trillion stars. Because of the vastness of the universe and the staggering

¹ Michel Mayor and Didier Queloz, ‘A Jupiter-mass Companion to Solar-type Star’, *Nature* 378:6555 (1995), 335-59.

² Bolmont et al., ‘Formation, Tidal Evolution, and Habitability’, 3: NASA, Kepler. <https://iopscience.iop.org/article/10.1088/0004-637X/793/1/3>

³ <http://exoplanet.eu.catalog/>

⁴ Andrew Davison, *Astrobiology and Christian Doctrine: Exploring the Implications of Life in the Universe* (Oxford: Oxford University Press, 2023), 6.

⁵ A light year is a unit of distance, not time. It is the distance that light travels in one year in space. The distance of 1 light year is around 9.46 trillion kilometres.

⁶ Timothy Ferris, *Seeing in the Dark* (New York: Simon and Schuster, 2002), 253.

number of stars and planets, some scientists are wont to agree with the argument made by columnist Bernard Levin in 1995 that

If you just think for a moment about those vast number of other worlds you should be rocking with laughter if anyone suggests that the Universe is peopled only by us.⁷

What would happen to the religious systems and their beliefs should humankind one day encounter not just extraterrestrial life, but intelligent extraterrestrial life (ETI)? A number of secular thinkers and writers such as Steve Weinberg, Carl Sagan and Stephen Hawking believe that traditional religions, especially Christianity would be deeply challenged once the discovery of ETI is confirmed. They believe that ideas to which traditional Christianity is committed to such as human exceptionalism and the incarnation would be discredited. However, studies have shown that non-religious people are more pessimistic about the survival of traditional beliefs than those who hold those beliefs themselves. For example, in the Roper Poll of 2002, religious people stated that they would be unaffected by the discovery of ETI. 89 percent of participants between the ages of 35 to 49 and 91 percent between 50 to 64 said that their religious beliefs would not change at all.⁸ A slightly more recent study (2008) conducted by theologian Ted Peters and associates yielded the same results: 'Forecasts regarding imminent collapse of the world's religious belief systems were found to be more prevalent among non-religious respondents than among religious respondents.'⁹

While some non-religious commentators believe that the discovery of ETI will discredit traditional religions such as Christianity, others opine that they will be surpassed by a superior faith. Combining evolutionary theory and the history of religions perspective, the American astronomer Jill Cornell Tarter speculates that ETI with a civilisation and technology more advanced than ours would also have a superior religion. She writes:

The major religions of the world may be able to accommodate the idea of extraterrestrials into their current dogma, but some of them may be quite discomforted by the information revealed by the fact of their extraterrestrial technologies.¹⁰

⁷ Bernard Levin, *The Times*, 22 August 1995.

⁸ Roper, 'UFOs & Extraterrestrial Life: Americans; Beliefs and Personal Experiences', 2002, <http://www.scifi.com/ufo/roper/03html>

⁹ Ted Peters and Julie Froehlig, 'The Peters ETI Religious Crisis Survey', 2002. <https://counterbalance.org/etsurv/PetersETISurveyRep.pdf>

¹⁰ Jill Cornell Tarter, 'SETI and the Religious Universe'. In Dick, S.J. (ed.) *Many Worlds: The New Universe, Extraterrestrial Life and the Theological Implications* (Radnor: Templeton Foundation Press, 2000), 148.

Our encounter with this advanced faith will result in our conversion, she speculates. The Australian theoretical astrophysicist, cosmologist and popular science-writer Paul Davies agrees with Tarter – although he also sees the possibility that ETI might have abandoned religion altogether:

God's progress and purposes will be far more advanced on some other planets than they are on Earth ... it might be the case that aliens had discarded theology and religious practice long ago as primitive superstition and would rapidly convince us to do the same. Alternatively, if they retained a spiritual aspect to their existence, we would have to concede that it was likely to have developed to a degree far ahead of our own. If they practised anything remotely like a religion, we should surely soon wish to abandon our own and be converted to theirs.¹¹

While many might be reluctant to follow the outlandish speculations of Tarter and Davies, the confirmation of the existence of intelligent extraterrestrial life would raise important questions for our understanding of the doctrines of the Church. In this paper, we will examine its implications for four fundamental themes of Christian theology, namely, creation, human uniqueness, sin, and the incarnation. What sort of questions would the existence of ETI raise in relation to the Christian doctrine of creation and the purpose that the Creator has for the universe? Are ETIs that are capable of a personal relationship with God also created in the image of their Creator? Did the primeval Fall take place only on planet Earth? Do ETIs who are not descendants of Adam and Eve inherit original sin? Are they in need of salvation? What about the Incarnation? Did the second person of the Trinity take up alien flesh? Did Christ die only for our world or also for many worlds?

These are some of the questions that the existence of ETIs raises that we hope to address – albeit briefly. But before we turn to them, a short discussion of the current state of the search for ET and ETI, and an outline of the emerging field of astrotheology would help to set the stage for the discussion.

THE SEARCH SO FAR

In this section, we recount very briefly a history of the search for extraterrestrial intelligence and discuss some of the challenges scientists working in this field continue to face. The story of the scientific attempts to locate extraterrestrial life can be traced to the early 1950s when John Kraus of Ohio State University built a crude radio telescope. However, for this paper we have selected as our starting point the contributions of the American astronomer and astrophysicist Frank Drake (1930-2022), whose famous Drake Equation (1961) pioneered the

¹¹ Paul Davies, *Climbing Mount Improbable* (London: Viking, 1996), 33-37.

enterprise of the search for ETI. Drake was also the co-founder and first president of the well-known SETI Institute.¹²

The Drake Equation is the probabilistic framework that attempts to estimate the number of stars permitting the formation of planets in any given galaxy. It also tries to ascertain the minimal percentage of those planets that could possibly be hospitable to intelligent life. The Equation is $N = R_* \times f_p \times n_e \times f_l \times f_i \times f_c \times L$. The number of civilisations that could communicate with each other (N) depends on seven factors: R_* , the rate at which stars form in a galaxy; f_p , the fraction of stars that have planets around them; n_e , the number of planets per star that are capable of sustaining life; f_l , the fraction of those planets where life actually emerges; f_i , the fraction of life-bearing planets that develop intelligent life; f_c , the fraction of intelligent species that develop detectable technology; and L , the longevity of communicative civilisations. Although the Equation looks sensible, it is notoriously difficult to apply and has unsurprisingly yielded wildly different results. As David Wilkinson explains,

This is a very difficult equation to use, due to factors which enter into it. R_* can be established observationally, and ... we may be able to estimate observationally f_p and n_e . The other factors are beyond current observation, and indeed for all of them we currently have only one case: that is, the Earth.¹³

Be that as it may, in 1984 the SETI Institute was established in California with the primary purpose of searching for alien civilisations. It was headed by the formulator of the Drake Equation and financed by millions of dollars of private donations. Since its founding, SETI has initiated numerous search projects and inspired many others. For example, in 1995, the Institute sponsored Project Phoenix, which used the world's largest radio-telescopes, including major radio telescopes in Australia (Parkes), the USA (Green Bank) and a 1,000-ft instrument in Puerto Rico (Arecibo Observatory).¹⁴ When its observations ended in 2004, Project Phoenix had scanned about 800 stars, all within a few hundred light-years of Earth, but found nothing.¹⁵

In 2015, the Berkeley SETI Research Centre at the University of California, Berkeley, launched its largest and most ambitious project in search for signs of ETI called Breakthrough Listen.¹⁶ Funded with US\$100 million by the philanthropist Yuri Milner, the project aims to scan up to a million nearby stars.

¹² SETI is the acronym for Search for Extraterrestrial Intelligence.

¹³ David Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence* (Oxford: Oxford University Press, 2013), 40.

¹⁴ SETI Institute, Project Phoenix, <https://www.seti.org/research/seti-101/project-phoenix/>

¹⁵ Ibid.

¹⁶ Danny Price, 'Breakthrough Listen is Searching a Million Stars for One Sign of Intelligent Life', *IEEE Spectrum*, 28 January 2021, <https://spectrum.ieee.org/breakthrough-listen-seti>

Compared with previous attempts, Breakthrough Listen covers much more of the sky, works with broader radio frequency ranges, and promises to achieve its goals much faster. It also boasts the use of cutting-edge data analysis such as high-throughput recording, massive data processing and machine-learning/anomaly - detection algorithms to search for unusual signs. By bringing in scale, funding, and modern technology to bear, Breakthrough Listen signals a paradigm shift away from the older approach, which used limited telescope time and narrow search scopes.¹⁷ However, in a 2018 paper, J. Emilio Enriquez et al., reported that not only did Breakthrough Listen not find any extraterrestrial signals, but their detection is complicated by anthropogenic radio frequency interferences (RFI).¹⁸

To date, there are numerous searches for ETI, not all of which are related to SETI. These include:

- Southern SERENDIP – a southern-hemisphere version of SETI that uses existing radio telescopes during their normal observation cycles to scan for narrowband or anomalous radio signals originating from extraterrestrial transmissions.¹⁹
- Project BETA (Billion-channel Extraterrestrial Assay), which started in the early 1980s but ended its operations in 1999 when the BETA dish was damaged.²⁰
- META II – the southern hemisphere counterpart to Project META (started in the 1980s) that operated in Argentina using a multi-channel high-resolution Fourier spectrometre. It was upgraded with more advanced instrument and an expanded overall bandwidth.²¹
- ASTRON – a national radio-astronomy institute of the Netherlands, responsible for designing, building and operating world-class radio telescopes and conducting astronomical research.²² ASTRON is not itself a SETI search. It operates observations such as LOFAR and the Westerbork Synthesis Radio Telescope.

Apart from listening for radio signals, which is the strategy of the traditional SETI projects, new initiatives have been launched using a different approach, namely, to search for extraterrestrial hardware or artefacts. The search for such physical relics is often called the Search for Extraterrestrial Artefacts (SETA) or

¹⁷ Danny C. Price et al., 'The Breakthrough Listen Search for Intelligent Life: Observations of 1327 Nearby Stars over 1.10 – 3.34 GHz', June 17, 2019, <https://seti.berkeley.edu/listen2019/BL1327stars.pdf>

¹⁸ J. Emilio et al., 'The Breakthrough Listen Search for Intelligent Life: 1.1 – 1.9 GHz Observation of 692 Nearby Stars', 23 April 2018, <https://arxiv.org/pdf/1709.03491>

¹⁹ Frank H. Stootman et al., 'The Southern SERENDIP Project', *A New Era in Bioastronomy ASP Conference Series*, Vol. 313, 2000, 491-496.

²⁰ Alan Macrobart, 'SETI Searches Today', *Sky & Telescope*, January 2019, <https://skyandtelescope.org/astronomy-news/seti-searches-today/>

²¹ Ibid.

²² ASTRON, <https://www.astron.nl/astronomy/>

‘interstellar archaeology’.²³ Such initiatives are currently undertaken by outfits such as the Galileo Project at Harvard University,²⁴ and the Interstellar Research Centre (ISC) based in the UK.²⁵ Some commentators are of the view that this approach of searching and identifying alien techno-signature may be a better strategy because it does not assume that extraterrestrial intelligent beings wish to communicate with Earth.

This is indeed the rationale of the founder of the Galileo Project, Avi Loeb of Harvard, who believes that scientists may have been barking up the wrong tree for seventy years. He opines that the search so far ‘is predicated on the assumption that extraterrestrials communicate via radio waves, a technology which we have used for just over a century and which advanced extraterrestrials may have long left behind.’ ‘I think the better strategy,’ he adds, ‘is to look for artefacts: alien tech.’²⁶ However, not every scholar is overly enthusiastic about this approach as serious problems remain. The vastness of the universe is one obvious impediment. Another is the passage of time. An artefact that is left exposed for millions of years may degrade or even be destroyed as it is exposed to micrometeorite impacts, solar radiation, and orbital perturbations. Furthermore, while it is perhaps possible for us to recognise that an artefact is ‘alien’ in some cases, that is unlikely in most cases. David Wilkinson puts this point across with a touch of mild, playful sarcasm:

There is the further problem of how would we recognise whether an ‘artefact’ was alien? It is unlikely that it would have ‘Property of the Klingon Empire’ in English stamped on it!²⁷

The search for extraterrestrial intelligence will always be haunted by what has been described as Fermi’s Paradox, associated with the 1938 Nobel Prize winning physicist Enrico Fermi. In the summer of 1950, Fermi, together with fellow scientists Edward Teller, Herbert York and Emil Konospinski were walking to lunch. This was the period in which there were numerous reports of flying saucer sightings. As the conversation progressed, Fermi suddenly speculated aloud, ‘Where is everybody?’ – referring to alien visitors. His friends took the question seriously because Fermi had been nicknamed ‘the Pope’ due to his near infallible scientific judgements.

²³ Robert A. Frietas Jr. and Francisco Valdes, ‘The Search for Extraterrestrial Artefacts,’ *Acta Astronautica*, Volume 12, Issue 12, December 1985, 1027-1034.

²⁴ <https://galileo.hsites.harvard.edu/>

²⁵ <https://interstellarresearchcentre.org/>

²⁶ Marcus Chown, Project Galileo: The Search for Alien Tech Hiding in Our Solar System, *BBC Science Focus*, April 18, 2022, <https://www.sciencefocus.com/space/alien-technology-project-galileo>

²⁷ Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence*, 93.

Fermi then scribbled some numbers on a piece of paper and made this conjecture. If the Earth is not exceptional in having intelligent life, then surely space will be filled with alien astronaut traffic. This is because in our Galaxy there are billions of stars older than the Sun. Given what we understand about evolution, many civilisations in our Galaxy should have achieved a much higher state of evolution than Earth's inhabitants. In fact, the emergence of humanity is quite late relative to the age of the universe. As Wilkinson arrestingly puts it, 'If the age of the Universe were to be represented by the whole of the *Encyclopaedia Britannica*, then we would appear in the last sentence in the last paragraph on the last page!'²⁸ If any of these older civilisations wanted to colonise the Galaxy, they would have done so by now, Fermi mused. So where is everybody? Thus, the challenge of Fermi's paradox is that extraterrestrial intelligence should be evidently there, but it is not.

Even if ETIs do exist, contact and communication with them are fraught with immense challenges and obstacles. Obviously, the first obstacle is the vastness of the universe that we have already alluded to in the introduction of this paper. The Earth and the other stars in the galaxy are very far apart and the galaxies are separated by millions of light years. A striking fact is that the light of the stars that we can see on a clear night left their sources for Earth at the time of the philosopher Plato or in the age of the dinosaurs! This means that radio contact will take a very long time, and, contact by travel seems impossible. For example, the recently discovered planet Proxima b around the star Proxima Centauri is only about 4.2 light-years away. Using current technology, it would take 6,300 years to travel there from Earth. As the *MIT Technology Review* explains:

Such a trip would take many generations. Indeed, most of the humans involved would never see Earth or its exoplanet counterpart. These humans would need to reproduce with each other throughout the journey in a way that guarantees arrival of a healthy crew at Proxima Centauri.²⁹

This is compounded by the fact that traveling at such great speed would require much energy and money. Perhaps this is why the universe remains so quiet. As Ken Croswell put it in 1997,

The challenges of interstellar travel are enormous – perhaps so enormous that its critics are right, and no civilisation will ever be able to achieve it,

²⁸ Ibid., 99.

²⁹ 'This is how many people we'd have to send to Proxima Centauri to make sure someone actually arrives,' *MIT Technology Review*, June 22, 2018, <https://www.technologyreview.com/2018/06/22/142160/this-is-how-many-people-wed-have-to-send-to-proxima-centauri-to-make-sure-someone-actually/#:~:text=Proxima%20Centauri%20is%204.2%20light,healthy%20crew%20at%20Proxima%20Centauri.>

thereby explaining why our Galaxy could abound with intelligent species we have never met.³⁰

The second problem (not unrelated to the first) is the time it takes for signals sent from an alien source to reach planet Earth. The American science writer, Timothy Ferris, has described this problem succinctly:

The first gulf is the amount of time it takes a signal to travel between contemporaneous civilisations. If, as some optimistic SETI scientists estimate, there are 10,000 worlds in the Milky Way galaxy today, the average time required to send a one-way message to one's nearest neighbour – across the back fence, so to speak – is on the order of 10,000 years.³¹

Another aspect of the problem of time has to do with differing technologies. Suppose an alien civilisation on a planet in the Milky Way sent a signal twenty thousand years ago, it would arrive on Earth during the ice age.³² In other words, the inhabitants of the planet Earth did not have the technology to receive the alien communication. Yet another related issue has to do with the lifespan of civilisations. An alien civilisation that sent a signal to Earth might become extinct when the signal arrives at its destination.³³

The final problem is the communication itself. There are millions of frequency bands that a radio communication could use. If we wish to send a signal to aliens, which frequency should we use? As early as 1959, scientists such as Cocconi and Morrison suggested that scientists should use 1420 MHz corresponding to a wavelength of 21 cm,³⁴ while others such as Carl Sagan proposed the frequency of 1420 MHz multiplied or divided by π .³⁵ The astronomer David Hughes baldly describes the challenge thus:

First you have to point your radio in the direction of a star that might be the parent of a planetary system ... Then, for each star you have to search

³⁰ Ken Croswell, *Planet Quest: The Epic Discovery of Alien Solar Systems* (New York: Free Press, 1997), 245.

³¹ Timothy Ferris, 'Interstellar Spaceflight: Can We Travel to Other Stars?' in *The Best of American Science Writing 2000* (New York: Ecco Press, 2000), 182.

³² By some reckoning, the last ice age started about 115,000 years ago and ended 11,700 years ago.

³³ Here, Isaac Asimov's comment is pertinent: 'Suppose that each civilisation that comes into being endures only for a comparatively short time and then comes to an end. That would mean that if we could examine all the inhabitable planets in the Universe, we might find that on a large number of them civilisation has not yet arisen, and on an even larger number of civilisations has arisen, but has already become extinct. Only on a very few planets would we find a civilisation that has arisen so recently that it has not yet had time to become extinct. The briefer the duration of civilisations, the less likely we are to encounter a world on which the civilisation has come and not yet gone.' Isaac Asimov, *Extraterrestrial Civilisations* (New York: Crown Publications, 1979), 189.

³⁴ G. Cocconi and P. Morrison, 'Searching for interstellar communications,' *Nature*, 184 (4690): 844-6.

³⁵ Carl Sagan, 'Eavesdropping on galactic civilisations,' *Science*, 1978, 202 (4366):374-6.

a radio window that stretches from 1 to 10 GHz and contains 100,000 million 0.1 Hz bandwidth channels. No wonder you are thankful for your computer's Fourier-transform superprocessor; no wonder you are worried about the fluctuations in the background noise resembling an artificial signal. And even overlooking the fact that your search might last for the lifetimes of many generations of scientists, you will still have to contend with the fickle nature of scientific-funding agencies who are only too happy at times to suggest you are wasting your time and their money.³⁶

As Wilkinson puts it: '... simply pointing a radio telescope randomly at the sky is a start, but nothing more than that. Even with unlimited resources – which, of course, are never available – this appears to be like looking for a needle in a haystack.'³⁷

Furthermore, even if contact is made, communication requires the use of language that both parties understand, assuming that the alien beings presumably do not understand or speak our languages. What would interstellar linguistics consist of? Some have suggested mathematics. Others opine that the best approach is to use a two-dimensional pictorial information about humanity and Earth's location such as the Pioneer Plaque designed by Carl Sagan and Paul Drake for Pioneer 10.³⁸ However, despite these challenges, the search for ETI have not abated and it appears that there is no shortage of benefactors who are willing to fund the enterprise.

ASTROTHEROLOGY: PAST AND PRESENT

The growing interest in intelligent alien life in outer space has compelled an increasing number of theologians to reflect on its implications for Christian doctrine. As a result, a field of theological speculation has emerged called astrotheology (previously exo-theology). The Lutheran theologian, Ted Peters, who coined the term, explains that astrotheology:

... relies primarily on the etymology, where *astro* directs our attention to the heavens and *theology* to the study and claims of the divine. The term *astrotheology* comes from the Greek: ἀστρο, *astro*, “constellation” plus θεός, *theos*, “God”, and λόγος, *logos*, “knowledge”. We prefix theology with *astro* to create multi-disciplinary branch of theology that takes up the

³⁶ David Hughes, quoted by Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence*, 85.

³⁷ Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence*, 84.

³⁸ Jake Rosenthal, “The Pioneer Plaque: Science as a Universal Language”, *The Planetary Society*, January 20, 2016. <https://www.planetary.org/articles/0120-the-pioneer-plaque-science-as-a-universal-language#:~:text=The%20Pioneer%20Plaque%20is%20a,in%20a%20different%20energy%20state>.

relationship between God and the creation, especially the creation of the universe over time.³⁹

Astrotheology is an aspect of the dialogue between theology and science – in this case with astronomy and astrobiology. It is fundamentally a theology of nature which brings the best scientific knowledge into critical dialogue with Christian doctrine. At the same time, it also takes into serious consideration how the existence of ETI (should it be confirmed) would shape the Church's understanding of creation, fall, Incarnation, salvation, etc.

Speculations about the possible existence of intelligent life in distant worlds are not a recent development. Early evidence of belief in many worlds is found in the writings of Anaximander (c. 610 – c. 546 BC) in the sixth century BC, who speculated that the cosmos is eternal. Atomist philosophers such as Democritus (c. 460 – c. 370 BC) and Epicurus (341 – 270 BC) held that these distant worlds are inhabited. The Christian theologian Hippolytus of Rome supplied this detailed record of the speculations of these philosophers:

Democritus ... spoke as if the things that were in constant motion in the void; and that there are innumerable worlds, which differ in size. In some worlds there is no sun and moon, in others they are larger than in our world, and in others more numerous. The intervals between the worlds are unequal; in some parts there are more worlds, in others fewer; some are increasing, some at their height, some decreasing; in some parts they are arising, in others failing. There are some worlds void of living creatures or plants or any moisture.⁴⁰

However, not all the great philosophers of ancient Greece shared the views of Democritus and Epicurus. Plato, whose influence on early Christian theologians is considerable, argued in *Timeaus* (31a – b) that the world which we inhabit is the only world – single and unique. Like Plato, Aristotle also held that there is only one world, rejecting the idea of an infinite universe and a plurality of worlds, although his position is somewhat more nuanced. In *On the Heavens*, he writes: 'We think of the stars as mere bodies ... entirely inanimate; but we should rather conceive of them as enjoying life and action ... We must, then, think of the actions of the stars as similar to that of animals and plants.'⁴¹ While Aristotle believed that there is only one cosmos, he stipulated that the stars are not inanimate and are analogous to living beings, insofar as their eternal, self-directed motion exhibits purposive activity.

³⁹ Ted Peters, 'Introducing Astrotheology' in *Astrotheology: Science and Theology Meet Extraterrestrial Life*, (ed) Ted Peters, (Eugene, Oregon: Cascade Books, 2018), 14.

⁴⁰ Quoted in Andrew Davison, *Astrobiology and Christian Doctrine*, 20.

⁴¹ Aristotle, *On the Heavens*, II.12.2922.

Since the Patristic period, a number of theologians have ventured to consider the possibility of the existence of other worlds and that at least some of them are inhabited by intelligent beings. Here, we take a cursory glance at some of the main theologians who have written on this topic, beginning with one of the greatest, though controversial, figures in the Patristic era, namely, Origen (185-254). Although Origen was in some significant ways influenced by Platonic and Neoplatonic philosophies, the polymath was also a student of the Greek astronomy of his day, which entertained the idea of other worlds. For example, five decades before Origen, Lucian of Samosata – whose novel is often described as the earliest work of science fiction – wrote about visits to the moon and to Venus and about communication with their inhabitants.⁴²

Not only did Origen believe in the plurality of worlds, he also held that they are teeming with life. In fact, he maintained that the stars and planets are alive, each a living body emitting light – even as he was careful to distinguish them from the angels. Alan Scott describes Origen’s vision of the cosmos thus:

Like all his contemporaries, Origen thinks that the universe was filled with rational, spiritual beings who have powers and responsibilities which were much greater than anything in the human race. Like his predecessors in Hellenistic philosophy, he divides these beings into angels and heavenly bodies without making clear how these two groups are related to each other.⁴³

On the question of whether the eternal Logos only took up human flesh or whether we must postulate multiple incarnations, Origen saw only one possible answer. The Logos must have worked salvation in various forms in different worlds. As J. A. Lyons puts it, ‘Taking the view that redemption is operative throughout the cosmos, Origen tries to evade the restrictive geocentrism which a unique terrestrial sacrifice seems to impose.’⁴⁴ For Origen, then, the biblical revelation is primarily focused on the story of the salvation of the inhabitants of planet Earth, with only vague allusions to its cosmic dimensions. However, God’s redemptive activity cannot be restricted to this planet alone. ‘The biblical record is paradigmatic but partial as religious cosmology,’ writes O’Meara, describing Origen’s thought. ‘The gift of redemption and eternal life and the process of incarnation are also extraterrestrial.’⁴⁵

⁴² ‘A True Story’, in *Lucian*, Vol 1, trans. A.M. Harmon (Cambridge, MA: Harvard University Press, 1913). Cited by Thomas O’Meara, *Vast Universe*, 64.

⁴³ Alan Scott, *Origen and the Life of the Stars: A History of an Idea* (Oxford: Clarendon University Press, 1991), 133.

⁴⁴ J. A. Lyons, *The Cosmic Christ in Origen and Teilhard de Chardin: A Comparative Study* (Oxford: Oxford University Press, 1982), 141.

⁴⁵ O’Meara, *Vast Universe*, 68.

A millennium after Origen, Thomas Aquinas, arguably the most astute and influential of the scholastic theologians, also speculated about the possibility of the existence of other worlds. Aquinas' metaphysics was broadly influenced by Aristotelian philosophy. However, he also lived in an age of bold explorations – of new ideas and texts, and also of the Asian empires of the East. Although Aquinas was inclined to embrace Aristotle's view and insisted that there is only one universe, he also emphasised the rich diversity of God's creation, as the existence of celestial beings (angels) testifies. 'God,' he asserts, 'is a living fountain, not one diminished in spite of its continuous flow outwards.'⁴⁶ In his great synthesis of the Christian faith, the Angelic Doctor writes:

God has produced things in existence to communicate goodness to creatures and to represent goodness in them. Because it [goodness] cannot be represented efficaciously by one creature alone, he created many diverse things so that in various ways what one does not present of the divine goodness another does.⁴⁷

Thus, although Aquinas did not specifically discuss the possibility of the existence of alien intelligent life, according to O'Meara, '[a] few of Aquinas' principles offer supportive insights for considering extraterrestrials theologically.'⁴⁸

Speculations about the existence of other worlds inhabited by intelligent creatures developed significantly in the later medieval and Renaissance periods. In the 15th century, the Franciscan friar Guillaume de Vaurouillon (1392-1463) speculated about whether the all-powerful God could have created a better world, or indeed, an infinity of worlds better than this one. 'Infinite worlds, more perfect than this one, lie hid in the mind of God,' writes de Vaurouillon, adding that '[i]t is possible that the species of each of these worlds are different from those of our world.'⁴⁹ Writing at around the same time, the German Bishop, theologian and polymath, Nicholas of Cusa (1401-1464), could assert with such confidence that 'none of the other regions of the stars is empty of inhabitants.'⁵⁰ Against the geocentrism of his day, he argued that the Earth is not distinguished by their physical centrality in the universe but by humans' relationship with its Creator. Finally, the metaphysician and astronomer, Giordano Bruno (1548-1600) envisioned the universe as infinite and living, consisting of numerous worlds of which Earth is only one. His speculations were so creative and

⁴⁶ Aquinas, *Super Evangelium Iacobi Lectura* (1:4), Quoted in O'Meara, *Vast Universe*, 71.

⁴⁷ Aquinas, *Summa Theologiae* I, 47, 3.

⁴⁸ O'Meara, *Vast Universe*, 71.

⁴⁹ Guillaume de Vaurouillon, *Quattuor librorum Sententiarum Compendium venerabilis patris Guillelmi Vorrillonis* lib, I, dist. xliv. Cited by O'Meara, *Vast Universe*, 75.

⁵⁰ Nicolas of Cusa, *On Learned Ignorance*, trans. Jasper Hopkins (Minneapolis: Arthur Banning, 1985), II,12 120.

courageous that they won the admiration and praise of Johannes Kepler (1571-1630), the celebrated German astronomer and mathematician.

The magisterial Protestant Reformers of the sixteenth century did not focus very much on the question of the plurality of worlds. Their emphasis was on the authority of Scripture and what it teaches about the justification of sinners in response to what they perceived to be Rome's errors. When the topic did arise in their writings, their views very much echoed that of the Roman Catholic Church, namely, that the notion of many worlds must be rejected as heresy. In fact, while Martin Luther (1483-1546) and John Calvin (1509-1564) were generally not dismissive of the natural sciences, they rejected the heliocentric universe proposed by Nicolaus Copernicus (1473-1543) and others. In their minds, the view of the moving Earth is contrary to Scriptural revelation. In his *Table Talk*, Luther accused Copernicus of proposing an erroneous astronomy:

This is what that fellow does who wishes to turn the whole astronomy upside down. Even in these things that are thrown into disorder, I believe the Holy Scriptures, for Joshua commanded the sun to stand still, and not the earth.⁵¹

Calvin echoed the view and sentiment of Luther in his sermon on 1 Corinthians 10:19-24 when he wrote that 'Just like the man who said that snow is black; for although it is perceived and known by all to be white, yet he clearly wished to contradict the fact. And so it is that they are madmen who would try to change the natural order, and even to dazzle eyes and benumb the senses.'⁵² It was Luther's protégé Philip Melanchthon who directly addressed the topic of many worlds in the framework of his Christology and soteriology.

The Son of God is one: our master Jesus Christ, coming forth in this world, died and was resurrected only once. Nor did he manifest himself elsewhere, nor has he died or been resurrected elsewhere. We should not imagine many worlds because we ought not imagine that Christ died and was risen often; nor should it be thought that in any world without knowledge of the Son of God that people would be restored to eternal life.⁵³

Although the view of the Reformers was quite prevalent in the sixteenth century, it started to retreat in the next – a century bustling with scientific activities and discoveries. By the time we arrive at the twentieth and twenty-first centuries,

⁵¹ Martin Luther, *Luther's Works, Volume 54 – Table Talk*, ed. Theodore Gerhardt Tappert, trans. Helmut T. Lehmann (Philadelphia: Fortress Press, 1967), 358-59.

⁵² John Calvin, 'Sermon on 1 Corinthians 10:19-24.' Quoted and translated by Robert White, 'Calvin and Copernicus: The Problem Reconsidered', *Calvin Theological Journal* 15, no. 2 (1980): 236-7.

⁵³ *Initia Doctrinae Physicae Dictat in Academia Witebergensi*, Column 220-1, Translation from O'Meara, *Vast Universe*, 81-2.

many theologians writing on the subject – Roman Catholic and Protestant alike – believe that the existence of ETI cannot be so hastily dismissed.

Writing from the Roman Catholic tradition, the internationally renowned palaeontologist and Jesuit theologian, Pierre Teilhard de Chardin (1881-1955), speculated that evolution on Earth must surely have a cosmic equivalent. In his influential book, *The Phenomenon of Man* (1959), Teilhard could speculate about evolution in the galaxies:

The universe is, both on the whole and at each of its points, in a continual tension of organic doubling-back upon itself, and thus of interiorisation ... For science, life is always under pressure everywhere ... and nothing will be able to stop it carrying to the utmost limit the process from which it has sprung.⁵⁴

Teilhard believed that it is the planets – not the stars – that have the potential to support different life-forms that could develop in varying degrees of complexity. About half a century before the discovery of the first exo-planet, Teilhard could write:

Despite their vastness and splendour, the stars cannot carry the evolution of matter much beyond the atomic series; it is only on the very humble planets, on them alone, that the mysterious ascent of the world into the sphere of high complexity has a chance to take place.⁵⁵

Two other Roman Catholic theologians in the twentieth century deserve brief mention here. The first theologian is Yves Congar (1904-95), whose influence in the shaping of the chief documents of Vatican II is so significant that theologians such as Avery Dulles have described it as ‘Congar’s Council’. Congar clearly stated that the biblical revelation is concerned primarily with the manifestation of the grace of God among the inhabitants of planet Earth. It supplies no information about other worlds. However, Congar also thought that the silence of the Bible on alien worlds should not prevent theologians from reflecting on the implications of ETI, should they exist. ‘Revelation being silent on the matter, Christian doctrine leaves us quite free to think that there are, or are not, inhabited worlds.’⁵⁶ Congar saw the question of extraterrestrial salvation as analogous to the questions raised about the conditions of people who are not Christians or who may not have the chance to encounter the Gospel.

⁵⁴ Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper and Brothers, 1959), 231.

⁵⁵ Teilhard de Chardin, ‘Life and the Planets’, in *The Future of Man* (New York: Harper and Row, 1964), 109.

⁵⁶ Yves Congar, *The Wide World My Parish: Salvation and Its Problems* (London: Darton, Longman and Todd, 1961), 185.

Another Roman Catholic theologian who has given attention to the topic is Karl Rahner, whose approach is informed and shaped by certain ideas about evolution. For Rahner, the history of evolution on Earth can be characterised by the phenomenon of self-transcendence where higher order emerges from lower ones, which he describes as nature's 'inward unfolding'. The epitome of this unfolding is the emergence of human nature which allows the coming into being of self-consciousness. Rahner applied this to the universe itself postulating that this inner dynamic of ever-greater complexity, transcendence and subjectivity is taking place in the cosmos from its very beginning. When this understanding of evolution is seen in light of the unimaginable vastness of the universe, the conclusion that there may be intelligent beings – non-human subjectivities – in the galaxies becomes almost inevitable. This is how Rahner put it:

This question must be raised in view of the vast immensity of the material cosmos as a world coming to be. If we imagine the cosmos as a world coming to be, and as oriented in its becoming to subjectivity, then it is really not to be taken for granted that this aim has been successful only at the tiny point [in the cosmos] we know as our earth ... the question in fact remains open as to whether the immense growth of the material cosmos has served only for the emergence of human subjectivity.⁵⁷

The final theologian that we examine is the Protestant theologian, Paul Tillich (1886-1965). In 1957, Tillich addressed this topic, which other Protestant theologians appeared to be avoiding, head-on in his *Systematic Theology*. Tillich discussed the possibility of ETI within the framework of Christology asking the fundamental question:

How are we to understand the meaning of the symbol 'Christ' in the light of the immensity of the Universe, the heliocentric system of planets and the infinitely small part of the other 'worlds' in which divine self-manifestations may appear and be received?⁵⁸

Tillich speaks of the paradigmatic nature of the way in which God has dealt with humankind on planet Earth, where the appearance of Christ is the 'central event' in which God 'creates the meaning of human history.' However, he adds that one cannot rule out the possibility (hypothetically, at least) that other appearances, other incarnations, have taken place in other worlds. He writes:

At the same time, our basic answer leaves the universe open for possible divine manifestations in other areas or periods of being. Such possibilities cannot be denied. But they cannot be proved or disproved. Incarnation is

⁵⁷ Karl Rahner, *Theological Investigations 19: Faith and Ministry*, trans. E. Quinn (London: Darton, Longman & Todd, 1988), 51.

⁵⁸ Paul Tillich, *Systematic Theology*, Vol 2 (Chicago: University of Chicago Press, 1957), 95f.

unique for the special group in which it happens, but it is not unique in the sense that other singular incarnations for other unique worlds are excluded. Man cannot claim that the infinite has entered the future to overcome its existential estrangement in mankind alone. Man cannot claim to occupy the only possible place for the Incarnation.⁵⁹

Recent decades have witnessed a growing number of Protestant theologians writing on this topic. They include Ted Peters,⁶⁰ David Wilkinson,⁶¹ Andrew Davison⁶² and others. A number of Protestant theologians have also been enlisted by the National Aeronautics and Space Administration (NASA) to assess the reaction of the world should clear evidence of the existence of ETI present itself.⁶³ One of these theologians is Andrew Davison, Regius Professor of Divinity and residentiary canon at Christ Church, Oxford.

ETI AND CHRISTIAN DOCTRINE

We turn our attention now to the implications that the existence of ETI would have for Christian doctrine. In this section, we will focus only on the following doctrines: creation and Fall, human uniqueness (*Imago Dei*) and the incarnation.

Before discussing these topics, we note that there are Christians for whom this discussion is entirely unnecessary and irrelevant. There are Christians who believe that ETI do not exist because, were they to exist, the Bible would have mentioned them. For example, the Christian Answers Network maintains that ‘the Bible does not teach that intelligent life exists elsewhere in our universe. Although our all-powerful God could have created such life had he desired, it seems rather obvious from Scripture that he did not.’⁶⁴ Writing for Answers in Genesis, the Christian astrophysicist, Dr Jason Lisle, argues that ‘the notion of alien life does not square well with Scripture.’ He explains:

The earth is unique. God designed the earth for life (Isaiah 45:18). The other planets have an entirely different purpose than does the earth, and thus, they are designed differently ... But where does the Bible discuss the creation of life on the ‘lights in the expanse of the heavens’? There is no such description because the lights were not designed to accommodate

⁵⁹ Ibid., 110-11.

⁶⁰ Peters, *Astrotheology*, 2018.

⁶¹ Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence*, 2013.

⁶² Davison, *Astrobiology and Christian Doctrine*, 2023.

⁶³ Stacy Liberatore, ‘NASA “looks to the heavens” for help: Agency enlisted 24 theologians to assess how the world would react to the discovery of alien life on distant planets and how it might change of perception of gods and creation’, *Daily Mail*, 24 December 2021, <https://www.dailymail.co.uk/sciencetech/article-10343387/NASA-enlists-24-theologians-assess-world-react-discovery-alien-life.html>

⁶⁴ Christian Answers Network, <http://www.christiananswers.net/q-eden/eden-co12.html>

life. God gave care of earth to man, but the heavens are the Lord's (Psalm 115:16). From a biblical perspective, extraterrestrial life does not seem reasonable.⁶⁵

A second group of Christians also believe that ETI do not exist because the Bible is silent about them, but they offer a twist to the issue: the numerous sightings and claims of alien abductions are interpreted as demonic deception. This view is mainly associated with Russian Orthodox theologians. For example, Fr Seraphim Rose, an American priest and hieromonk, and an influential voice of Russian Orthodox Church outside Russia, advanced this view.⁶⁶ Bishop and theologian Hilarion Alfeyev echoed the teachings of his predecessors by asserting that ETI are demonic manifestations, adding that if they existed 'the Bible would definitely say something about that.'⁶⁷ The late Archbishop Chrysostomos of Etna went so far as to assert – rather puzzlingly – that the alien abductors of ufology are demons because they 'look like demons.'⁶⁸

The Christians who doubt the existence of ETI because of the silence of the Bible may well be right. There is currently no solid evidence of their existence or non-existence. However, based on the factors that we have examined and discussed in previous sections of this paper we believe that the possibility of their existence cannot be ruled out entirely. The purpose of this paper – and that of astrotheology in general – is to reflect on the implications for Christian doctrine if they exist and if they are material creatures, not demons. As mentioned earlier, astrotheology is largely speculative in nature, but it is speculation based on the converging insights of contemporary astrophysics and astrobiology and what Christian theology affirms about God and his relationship with all created reality.

Creation

The first doctrine that we will consider is that of creation. The earliest chapters of the Christian Bible describe God as the Creator of the universe and all that there is (Genesis 1 and 2). This profound and fundamental truth is repeatedly underscored in different ways throughout the Bible – in the Psalms (Psalm 33:6-9; 104:24-30; 145:15-16), the Prophets (Isaiah 37:16; Jeremiah 32:17; Amos 4:13), and also throughout the New Testament (Romans 1:24; 1 Corinthians 8:6; Revelation 4:11). The great ecumenical creeds of the Church also emphasise this truth by confessing that God is the Creator, of 'heaven and earth' (Apostles' Creed), and 'all things visible and invisible' (Nicene Creed). Informed and shaped by the biblical revelation, the Christian doctrine of creation makes the radical

⁶⁵ Jason Lisle, 'Are Aliens Real?' *Answers in Genesis*, December 6, 2007,

⁶⁶ Seraphim Rose, *Orthodoxy and the Religion of the Future* (St Herman of Alaska Brotherhood, 1979), 99-143.

⁶⁷ 'Russian Orthodox Church equates aliens with demons', *Interfax News Agency* (April 20, 2020).

⁶⁸ Chrysostomos of Etna, 'Alien Abductions and the Orthodox Christian'. *Orthodox Tradition*, Vol. 14, No. 1 (1996), 57-62.

assertion – against the great mythologies of the ancient world – that before God created the world, nothing existed except him. God alone brought all that is into being *ex nihilo* – he has neither competitor nor collaborator. T.F. Torrance puts it succinctly as follows:

The creation of the Universe out of nothing does not mean the creation of the Universe out of something that is nothing, but out of nothing at all. It is not created out of anything – it came into being through the absolute fiat of God’s word.⁶⁹

So central is the doctrine of creation that some commentators believe that should SETI be successful in its search, this fundamental doctrine will be discredited, and, with it, the God of Christianity. Unsurprisingly, we encounter such claims in the works of secular or agnostic writers such as Paul Davies, who asserted in various places that the discovery of ETI would shatter traditional Christian beliefs about God.⁷⁰ However, as David Wilkinson has rightly pointed out, ‘[i]t is difficult to see any strength in this argument.’⁷¹ Perhaps Davies had in mind the most conservative version of the doctrine, which holds that God created the entire cosmos in six days. Even so, there is no reason to conclude that God could not have created ETI within that timeframe. Be that as it may, the argument that the discovery of ETI might discredit the doctrine of creation is not only advanced by secular writers. Christians who argue that ETI do not exist because the Bible is silent about them – to whom we have alluded earlier – also think that biblical truth is threatened should their existence be established. In response, it should be pointed out that the Bible does not provide a catalogue of every creature that the Creator has brought into existence. As Wilkinson wryly puts it, ‘The Bible does not mention explicitly the creation of cats and dogs, amoeba and armadillos, dodos and dinosaurs, and a host of other aspects of the natural world.’⁷²

There are also those who maintain that the discovery of other worlds inhabited by ETIs would discredit the geocentrism and Earth-chauvinism of Christianity which is allegedly grounded in its doctrine of creation. Some commentators argue that the discovery of other worlds with intelligent inhabitants would signal an expansion of the scope of the Copernican Principle, a term coined by the Austrian-British mathematician and cosmologist, Herman Bondi.⁷³ Just as Copernicus’ discovery banished the Earth from the centre of the solar system – so the argument goes – the discovery of other worlds would also greatly diminish Earth’s cosmological significance. This ‘demotion myth’, as it is sometimes called,

⁶⁹ T.F. Torrance, *The Christian Doctrine of God: One Being, Three Persons* (Edinburgh: T and T Clark, 1996), 207.

⁷⁰ Paul Davies, *God and the New Physics* (New York: Simon & Schuster, 1983).

⁷¹ Wilkinson, *Science, Religion and the Search for Extraterrestrial Intelligence*, 130.

⁷² *Ibid.*, 131.

⁷³ Herman Bondi, *Cosmology* (Cambridge: Cambridge University Press, 1952).

has troubled some theologians. Writing on this issue, Eric Chaisson and Steve McMillan articulate their anxieties thus:

We have faced this dilemma before: Copernicus and Galileo dethroned the human. Darwin made us mere coincidences of evolution. Slowly the human race is discovering that we're not the center of the universe, but that both space and time are so vast that we are mere blips on the screen ... This ... won't go down lightly.⁷⁴

Orthodox theology need not be concerned about this because the demotion myth is nothing more than a myth. Earlier scientists such as Copernicus and Galileo – both of whom were devout Christians – were not in the least bit perturbed that their discoveries might discredit the Christian faith. The demotion myth is based on a certain jaundiced reading of Christianity which wrongly portrays it as an advocate of geocentrism when in fact its vision is profoundly theocentric. Thus, I concur with Ted Peters when he writes:

An astrotheologian need not loiter on the question of geo-centrism with its Earth chauvinism. What is foremost is the question of scope: does God's creation deal solely with Planet Earth or does it encompass the entire universe with its 13.82 billion year history and perhaps hundred billion year future?⁷⁵

Regarding Peters' question, Orthodox theology unequivocally states that God is the Creator and Sustainer of the *entire* cosmos – from its beginnings to its eschatological transfiguration. The God who brought the cosmos into being is an extravagant Creator who will achieve his purposes for his handiwork by his sovereign will. Even a cursory reading of Genesis would give one the impression of the stupendous creativity of God who brought into being *ex nihilo* ('out of nothing') our universe, with all its diversity and abundance. Into the darkness, disorder and monotony, the Creator created light, structure, diversity and harmony. And from the lifelessness of the newly formed cosmos, the Creator brought forth life of unimaginable variety. The universe that God brought into being is not just orderly, it is also a place of profound beauty. As Wilkinson eloquently puts it, 'The contrasts of heat and cold, oceans and dry land, the brightness of the summer day, and the star-field of a clear night, affect all our senses and add to our experience as an awe-inspiring place.'⁷⁶ Thus, the verdict of the Creator: 'God saw all that he had made, and it was very good' (Genesis 1:31).

The greatest understatement in the Genesis account of creation is found in 1:16b: 'He also made the stars.' Although the Bible does not make any direct references

⁷⁴ Cynthia Crysdale, *Astronomy Today*. 8th ed. (Boston: Pearson, 2014), 43.

⁷⁵ Ted Peters, 'The Tasks of Astrotheology', in *Astrotheology: Science and Theology Meet Extraterrestrial Life*. Edited by Ted Peters (Oregon: Cascade Books, 2018), 44.

⁷⁶ Wilkinson, *Science, Religion and the Search for Extraterrestrials*, 135.

to the plurality of worlds, much less the existence of intelligent beings in other planets, this short sentence gestures suggestively to the vastness of the created universe. Many other passages also allude to this. For example, in Psalm 8, the human creature is placed amidst the enormity and splendour of the entire cosmos:

When I consider your heavens, the work of your fingers, the moon and the stars which you have set in place, what is mankind that you are mindful of them, human beings that you care for them (8:3-4).

For the ancient psalmists, the vastness of the universe – with stars literally outnumbering the sands on all the beaches on planet Earth! – is not just the works of the hands of the Creator (Psalm 102:25). It also reveals and proclaims the glory of their Maker:

The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they reveal knowledge. They have no speech, they use no words; no sound is heard from them. Yet their voice goes out into all the earth, their words to the ends of the world (Psalm 19:1-4).

The diverse and multifaceted universe points to the distinctive character of its Creator, revealing him, as the supreme Artist – as theologians as diverse as Augustine in the fifth century and Dumitru Stăniloae in the twentieth have pointed out. The beauty and majesty of the universe, from its billions upon billions of stars to its microscopic organisms, is the handiwork of its Creator for whom beauty is an intrinsic attribute. The elegant laws of physics are a reflection of the wisdom and faithfulness of God. The created order, writes Aquinas, is at once ‘the art of wisdom and the realm of divine goodness.’⁷⁷ Thomas O’Meara puts this eloquently when he writes that ‘Order within order and diversity within plurality suggest not a machine but an artist. God is related to the universe in many ways: as cause, as planner, as lover.’⁷⁸ As the creator of time, the eternal God is mysteriously and profoundly involved in the history of the universe – the history of every star and every planet – even though he is not subject to temporality. Aquinas explains the eternal God’s relationship with the temporal and contingent universe he has created in this way:

Even before contingent beings come into existence God sees them as they actually exist, and not merely as they will be in the future or as they are present in their causes. His eternity is his contact in a present moment with the whole course of time.⁷⁹

⁷⁷ *Summa Theologiae* III, 1, 3.

⁷⁸ O’Meara, *Vast Universe*, 30.

⁷⁹ Aquinas, *Opuscula Theologica*, 133. Quoted by O’Meara, *Vast Universe*, 32.

The God who brought the cosmos into being thus has the most intimate knowledge of his creation. The transcendent God is profoundly and immanently present in the creation, acting freely and sovereignly without in any way robbing it of its own creaturely otherness and integrity. As theologian Joseph Bracken describes it:

The world of creation originally came into being and still continues to exist within the divine field of activity. Since the divine field of activity is infinite and strictly unlimited, creation cannot exist apart from God but only in God. Yet since creation as a whole is to be understood as a complex set of overlapping and hierarchically ordered field of activity for created occasions, it can exist within the divine field of activity and yet retain its own ontological identity apart from the three divine persons.⁸⁰

Or, as the eminent Catholic theologian of the last century, Karl Rahner, puts it:

This God is not merely the eternally distant mystery beyond the world and our existence. Rather, this God has made himself the innermost principle of the world's activity. This innermost, divine, fundamental dynamic is at work everywhere in the world and everywhere in history, and in the history of religions too.⁸¹

All this means that God is perfectly free to create other worlds in his vast universe some of which are designed to be hospitable to alien civilisations. 'Christian theology,' writes Mark Worthing, 'has no biblical or theological basis upon which to reject out of hand the possibility of extraterrestrial life.'⁸²

This also means that if there is intelligent life in other planets and galaxies, God will be present with them with his providential and salvific grace. As O'Meara comments, '[t]heir intelligence and freedom invite an intimacy and immortality with God ...' adding that '[g]race in extraterrestrial lives and cultures would be richer than kinds of gravity in clusters of stars.'⁸³

Wilkinson is right to say that with this vision of God and his creation the theologian should be 'relaxed about and should expect the discovery of further diversity in the Universe.'⁸⁴ Far from discrediting the doctrine of creation, the

⁸⁰ Joseph Bracken, *Subjectivity, Objectivity and Intersubjectivity: A New Paradigm for Religion and Science* (West Conshohocken, PA: Templeton Press, 2009), 172.

⁸¹ Karl Rahner, 'Christianity's Absolute Claim,' *Theological Investigations* 21 (New York: Crossroad, 1988), 175.

⁸² Mark Worthing, 'The possibility of extraterrestrial intelligence as theological thought experiment,' in Kelly, T.J. and Regan, H.D. (eds), *God, Life, Intelligence and the Universe* (Hindmarsh, SA: Australian Theological Forum, 2002), 71.

⁸³ O'Meara, *Vast Universe*, 33.

⁸⁴ Wilkinson, *Science, Religion and the Search for Extraterrestrials*, 137.

discovery of other worlds and their possible inhabitants should help us to appreciate even more the Creator and the extravagance of the cosmos he has brought into being. As Father Theodore M Hesburgh, who served as President of the University of Notre Dame from 1952-1987, puts it so well:

It is precisely because I believe theologically that there is a being called God, and that he is infinite in intelligence, freedom, and power, that I cannot take it upon myself to limit what he might have done. Once he created the Big Bang ... he could have envisioned it going in billions of directions as it evolved, including billions of life forms and billions of kinds of intelligent beings ... As a theologian, I would say that this proposed search for extra-terrestrial intelligence (SETI) is also a search of knowing and understanding God through his works, especially those works that must reflect him. Finding others than ourselves would mean knowing him better.⁸⁵

Imago Dei

Closely related to the question of geo-centrism and Earth-chauvinism discussed in the previous section is that of the alleged anthropocentrism of the Bible. Commentators who raised this issue often argue that the Bible is focused on human uniqueness and exceptionalism, even to the extent that it teaches that God became a human being in order to redeem the cosmos. This observation is famously made by Paul Davies in his 2010 book, *Eerie Silence*. Davies' larger point is that if conclusive evidence of the existence of ETI were to emerge, Christianity would be the religion most vulnerable to being discredited because of its anthropocentrism.

Christianity is the religion most challenged by the concept of extraterrestrial beings, because Christians believe that God became a human being. Jesus Christ is called the Saviour precisely because he took on human flesh to save humankind. He did not come to save the whales or the dolphins or the gorillas or the chimpanzees, or even the Neanderthals, however noble or deserving those creatures may be (or were). Jesus was the Saviour of *Homo sapiens*, specifically; one planet and one species.⁸⁶

We will discuss the incarnation in light of the hypothetical existence of ETI in great detail below. However, in response to Davies' view that the Bible and therefore the Christian religion is irreducibly anthropocentric, it bears repeating

⁸⁵ Quoted in F. D. Drake and D. Sobel, *Is Anyone Out There? The Scientific Search for Extraterrestrial Intelligence* (New York and London: Pocket, 1994), 23.

⁸⁶ Paul Davies, *The Eerie Silence: Renewing Our Search for Alien Intelligence* (Boston: Houghton Mifflin, 2010), 188.

a point we made earlier. Properly understood, Christianity is neither geo-centric nor anthropocentric, but theocentric.

It is, however, pertinent to note that secular and agnostic writers such as Davies are not the exception when it comes to misconstruing Christianity as being intrinsically anthropocentric. The renowned Methodist theologian of the last century, Luther Tracy Townsend, also adopted this perspective. He even went so far as to argue that if human supremacy is not true, then the biblical authors have misrepresented God's relationship with humanity. In his 1914 treatise, *The Stars Not Inhabited*, Townsend argued quite strongly that ETIs do not exist because their existence would undermine the privileged position of human beings.

If he [the human being] is not the greatest, the grandest, the most important of created things, the one to whom all else is made to contribute, then the Bible writers have misrepresented entirely man's relation to God and the universe.⁸⁷

Not all Christians would agree with Townsend's anthropocentrism, especially his view of human greatness. For example, the great German mathematician, astronomer, theological thinker, and deeply committed Lutheran Christian, Johannes Kepler, once wrote: 'How can all things be for man's sake? How can we be masters of God's handiwork?'⁸⁸

In the view of many, the doctrine that most clearly supports the anthropocentrism of the Bible and Christian Faith is the *imago Dei*. Yet, this doctrine ironically also undermines this alleged anthropocentrism. In the creation narrative, human beings are deliberately distinguished from the rest of the creatures because they and they alone are created in the image and likeness of their Creator (Genesis 1:26-27). The history of theology has supplied several accounts of the image of God which we will very briefly rehearse here. The first and oldest account of the image has been described as the substantive view, according to which the image is found in some quality in the human creature that reflects its Creator. Thomas Aquinas and others have argued that that quality is reason.⁸⁹ This view is also held by the magisterial Reformers such as Martin Luther and John Calvin. The second and more recent view, espoused by theologians such as Barth and Brunner, is that the image of God has to do with the capacity of human beings for relationship. – with God and one another. The third and final view states that the image of God is fundamentally about the role or function that human beings are called to perform. According to this account, human beings reflect the image of the Creator by exercising dominion over all

⁸⁷ L. T. Townsend, *The Stars Not Inhabited: Scientific and Biblical Points of View* (New York: Eaton and Mains, 1914), Quoted without page number by Andrew Davison, *Astrobiology and Christian Doctrine*, 152.

⁸⁸ Quoted by Wilkinson, *Science, Religion and the Search for Extraterrestrial Intelligence*, 138.

⁸⁹ Thomas Aquinas, *Summa Theologica*, Part I, question 91.

creation in a way which reflects God's lordship over all that he has made. This view maintains that it is the divine mandate given to human beings recorded in Genesis 1:29-30 that is the basis for understanding the significance of the *imago Dei*. As Leonard Verduin explains, 'That man is a creature meant for dominion – having and that as such he is in the image of his Maker – this is the burden of the creation account given in the book of Genesis, the Book of Origins. It is the central point the writer of this account wanted to make.'⁹⁰

The traditional account – i.e., the substantive view – is arguably most commonly used to argue that should intelligent creatures exist on other planets, they too must be bearers of the divine image. The logic is quite simple: since the locus of the image is reason and intellect, any creature with these qualities and capacities may be said to be a bearer of the image of God. This argument has its precedent in the tradition, especially in Thomas Aquinas' angelology. To the question 'Whether the angels are more to the image of God than man is?' Aquinas replied 'Yes' in one sense, and 'No' in another. Insofar as the image of God has to do with a certain imitation of God, the answer is 'No'. This is because like God, who proceeds from God, man proceeds from man, whereas this is not the case with angels. However, as far as the intellect is concerned, Aquinas argues that 'the angels are more to the image of God than man is, we must grant that, absolutely speaking, the angels are more to the image of God than man is, but that in some respects man is more like God.'⁹¹ Aquinas' intricate arguments are the subject for another paper and should not concern us here. What is of moment is that, on the basis on this view of the image and the precedence set by Western theology's most profound theologian, some have argued that ETIs could be bearers of the divine image. Put differently, the tradition allows us to envision non-human but rational creatures as the *imago Dei*, even though Scripture explicitly describes only human beings as such.

However, it is pertinent to note that this line of argument itself is quite problematic. If the presence of capacities such as sentience, intelligence and reason is taken to signal the presence of the divine image, one must ask what follows from their absence? Christian bioethics has long discussed the question of whether a comatose patient who is no longer capable of self-determination should still be regarded as the bearer of God's image worthy of dignity and respect. The same problem arises in discussion of machines powered by sophisticated Artificial Intelligence (AI). Should these machines become sentient or conscious, must they also be regarded as bearers of the divine image? Be that as it may, even if ETIs were bearers of the divine image, it is unclear why this should threaten human value, as some Christians – Townsend among them – have feared? As Davison incisively puts it, 'Why should we suppose that anything

⁹⁰ Leonard Verduin, *Somewhat Less Than God: The Biblical View of Man* (Grand Rapids: Eerdmans, 1970), 27.

⁹¹ Thomas Aquinas, *Summa Theologica*, Part I, Question 93, art. 3.

valuable or glorious about human beings would be less valuable or glorious just because it turned out that dolphins, for instance, had a rich intellectual, communal, religious, and artistic life?⁹² The discovery of other image bearers would not discredit Christianity because the charge of anthropocentrism rests on a caricature, for Christianity is irreducible theocentric. Far from diminishing humanity, the discovery of extraterrestrial bearers of the divine image would only deepen our understanding of God and the astonishing diversity of the creation he has brought into being.

Is it possible that intelligent extraterrestrial beings capable of self-determination and spiritual relationship with their Creator are not given the privilege of bearers of the divine image? Christian theologians such as Joshua Moritz have argued that this is indeed possible – and perhaps even required, given the fact that that this designation is used only for human beings. Drawing from the relational and functional accounts of the *imago Dei*, Moritz argues, in agreement with some biblical scholars, that ‘the imago Dei in humans is a type of kingly and priestly representative function that the human species fulfils.’⁹³ This calling or role given to the human species is based on a unique relationship that God has established with it. Moritz therefore argues that

both the *functional* and *relational* understandings of the imago Dei emerge from – and can be unified through – viewing the ‘image and likeness of God’ as God’s historical *choosing* or *election* of human beings *from among the animals* and setting them apart for the sake and fulfilment of the divine purposes (Italics in original).⁹⁴

Moritz makes the distinction between this election – which he describes as ‘historical election’ – from the election for salvation found in Calvinistic theologies. He explains that historical ‘[e]lection in the biblical understanding relates to a *people* (and often a lineage) whom God has chosen *in the midst of history* for a special *purpose* within the wider context of God’s design’ (Italics in original). ‘This purpose of historical election is furthermore defined not in terms of privilege (or even individual salvation), but rather for the sake of service.’⁹⁵

To the charge of anthropocentrism or human exceptionalism – and, in this case, even speciesism – Moritz explains that election is always based on God’s love and grace, and never on the merits of the elected.

⁹² Davison, *Astrobiology and Christian Doctrine*, 152.

⁹³ Joshua Moritz, ‘One Imago Dei and the Incarnation of the Eschatological Adam’, in *Astrotheology: Science and Theology Meet Extraterrestrial Life*, Ted Peter (ed). (Eugene, OR: Cascade Books, 2018), 333.

⁹⁴ *Ibid.*, 333-4.

⁹⁵ *Ibid.*

Those who are elected are not chosen because they are ‘the greatest’ or inherently more worthy than others, but rather they are elected as a result of mysterious acts of divine love and grace.⁹⁶

Moritz quotes Joel Kaminsky, who wrote that ‘the concept of election was never assumed to be only for the benefit of the elect, but it was always about God’s plan for the whole world, the elect and non-elect alike.’⁹⁷ To Moritz, this suggests to him that rather than being a matter of exclusivism or particularism, historical election in fact has an inclusive and universalistic tendency. He also draws from Lutheran theologian Wolfhart Pannenberg who wrote that ‘the election of Israel is not an end in itself. It serves the will of God on behalf of the human race as a whole.’⁹⁸ Moritz applies these insights to the historical election of the human race to be the bearers of the divine image. According to this interpretation, then, the *imago Dei* has to do with vocation, representation and service.

This approach allows theology to maintain that the privilege and responsibility of being the divine image bearers belongs to the human race alone – in line with the emphasis of Scripture. This means that there is no pressing need to hastily conclude that non-human extraterrestrial life must also be bearers of the divine image simply because they possess the requisite capacities such as intellect or reason. This approach also has merit in that it emphasises that being chosen as the bearers of God’s image does not suggest that human beings are superior in any way to intelligent non-human creatures on other planets or in other galaxies. The election is based entirely on God’s grace and the mystery of his plan for the cosmos. The fact that planet Earth and its human inhabitants are such late comers to the Universe is perhaps a poignant indicator of this.

This begs the question of whether it is also God’s plan to bring salvation of the cosmos by taking up human flesh (and not alien flesh also) in the Incarnation. We will reflect on this question below. Before we do this, we must turn our attention to the primeval Fall. Did the fall only take place on planet Earth? Or have other alien civilisations also rebelled against God in the same way that Adam did? If they did not, do they need to be saved? How can non-human extraterrestrials be said to inherit the sins of Adam if they are not his descendants and even members of the same species?

Cosmic Fall

The third doctrine that we will consider is that of the Fall. The Bible provides a clear account of the disobedience of the first human couple at the very beginning

⁹⁶ Ibid., 334.

⁹⁷ Joel Kaminsky, *Yet I Loved Jacob: Reclaiming the Concept of Biblical Election* (Eugene, OR: Wipf & Stock, 2016), 25-26.

⁹⁸ Wolfhart Pannenberg, *Human Nature, Election, and History*. (Philadelphia: Westminster John Knox, 1977), 49.

of Scripture (Genesis 3:1-5). According to this account, Adam and Eve openly and deliberately violated a specific command given by God not to eat of the tree of the knowledge of good and evil in the paradisaal Garden (Genesis 2:16-17; 3:1-7). This act of willful disobedience is depicted as a grasping after autonomy and an unwillingness to accept their creaturely finitude. In short, it was motivated by their desire to 'be like God', at the serpent's enticement (Genesis 3:5). The result of this act of rebellion is nothing short of cataclysmic. The first humans were alienated from God (Genesis 3:8-10), and from each other, as shame enters into their relationship ('they realized they were naked', Genesis 3:7), as well as animosity (Genesis 3:12). As a result of this primordial sin, death (both physical and spiritual) entered into human existence. The introduction of death into human life is profoundly related to the basic motivation of the couple's transgression, namely, the rejection of their creatureliness. As Wolfhart Pannenberg has brilliantly observed, 'Precisely for this reason they are riveted to their finitude, and this takes place through death. The distinction between finitude and death may be seen here in the fact that it is precisely the sinner's nonacceptance of their finitude that delivers them up to death.'⁹⁹

The biblical account of the primordial Fall must not be understood as a mere mythic story but as a foundational explanation of the human condition before God. Hence, the *Catechism of the Catholic Church* (CCC) states unequivocally that:

The account of the fall in Genesis 3 uses figurative language, but affirms a primeval event, a deed that took place at the beginning of the history of man. Revelation gives us the certainty of faith that the whole of human history is marked by the original fault freely committed by our first parents (§ 390).

As already alluded to in the above quotation, the 'original' sin of Adam and Eve and its consequences became a universal human condition. Drawing from the writings of Paul, the *Catechism* explains:

All men are implicated in Adam's sin, as St Paul affirms: 'By one man's disobedience many (that is, all men) were made sinners.': 'sin came into the world through one man and death through sin, and so death spread to all men because all men sinned.' The apostle contrasts the universality of sin and death with the universality of salvation in Christ. 'Then as one man's trespass led to the condemnation of all men, so one man's act of righteousness leads to the acquittal and life for all men.' (§ 402).

The biblical account of the sin of the first human couple is limited in its explicit scope to the human race and the planet it inhabits. The question for

⁹⁹ Wolfhart Pannenberg, *Systematic Theology*. Volume III (Grand Rapids: Eerdmans, 1998), 561.

astrotheology is whether the story of Adam and Eve and the human race is replicated in other alien races and civilisations across the universe. Various answers have been offered, all of which have profound ramifications for Christology and soteriology (not to mention eschatology). Some have argued that it is possible that the Fall only occurred on planet Earth. Alien civilisations, they opine, might have enjoyed such a profound and intimate relationship with their Creator that they are innocent of rebellion and sin – and therefore have no need for salvation. Others argue that as long as these intelligent beings possess something like human free will, the possibility of their misusing this gift cannot be dismissed. Still others maintain that even if alien beings across the universe have not fallen, they are profoundly impacted by human rebellion whose ramifications are cosmic and therefore are also in need of divine healing and restoration.

In the 1930s and 40s, C. S. Lewis published the Space Trilogy which addresses the question of how human sinfulness would affect the life of inhabitants of other planets. In particular, Lewis addresses the question of whether, if alien races do exist somewhere in the universe, they have followed the footsteps of the first human pair in rebelling against their Creator. What Lewis focused on in these works of fiction – *Out of the Silent Planet* (1938), *Perelandra* (1943), and *That Hideous Strength* (1945) – were questions seldom treated by theologians at the time. Lewis speculated that it is quite possible that these alien beings are in harmony with their Creator and living on a planet that remains untainted by the Fall, as ours once was in the Garden of Eden. Lewis also postulated that evil is rare in the Universe, and that the Earth is separated from the other planets so that sin does not spread to them. In 1958, the British science novelist, James Blish, also envisioned a virtuous alien race in *A Case of Conscience*, where a team of scientists encountered ETIs that followed Christian morality perfectly.¹⁰⁰ This view is common among many of today's scientists and UFO enthusiasts who believe that ETIs are more virtuous than humans because they are more highly evolved.¹⁰¹ Writing from a particular theological persuasion, theologians such as Keith Ward have supported this view – or at least think that it is not improbable – because they view sin as a contingent and not necessary reality. In *Christ and Cosmos*, Ward argues:

God did not have to create humans, humans did not have to become prey to hatred and greed, and God did not have to deliver humans by death on a cross ... these are all contingent occurrences. They did not have to happen. God might well have created other kinds of intelligent life, there

¹⁰⁰ James Blish, *A Case of Conscience* (New York, NY: Ballantine Books, 1958). Cited by Wilkinson, *Science, Religion and the Search for Extraterrestrial Life*, 162.

¹⁰¹ Ted Peters, 'One Incarnation or Many?' in *Astrobiology: Science and Theology Meet Extraterrestrial Life*, Edited by Ted Peters. (Eugene, Oregon: Cascade Books, 2018), 286.

could have been intelligent life that did not fall into evil, and God might have chosen another way of reuniting the human species to the divine.¹⁰²

Unlike Lewis and Blish, some think that it is highly improbable that the admixture of good and evil that we find in the human race is totally absent in alien civilisations. For example, Wilkinson writes that ‘it is difficult to imagine that the mix of good and evil, selfishness and self-giving which universally characterises human societies is not in some ways present in ETI.’¹⁰³ The theologian Robert John Russell takes up the point made by Ward arguing that ‘[s]in by definition, then, is unnecessary, but without grace it is inevitable. In sum, each of us is created in the *imago Dei*, the image of God, and each of us inherits the inevitability of sin ...’¹⁰⁴ According to Russell’s logic, then, to be created in the image of God is to be capable of exercising freedom, and this in turn means the possibility of rejecting the loving overtures of the Creator. For Russell, only by the grace of God can human beings as bearers of the divine image achieve their full humanity in the eschaton. ‘It is only through the grace of a loving God that our lives can be transformed into the fullness of what it truly means to be human, and what it is indeed truly human is given us in Jesus Christ.’¹⁰⁵ Adopting the view that ETIs are also created in the *imago Dei*, Russell comes to this conclusion: ‘In essence, I expect that ETI will experience a kind of moral dilemma that in many ways resembles the moral quagmire of terrestrial human experience, though obviously differing in the moral morphology of personal and social ethics.’¹⁰⁶ Thomas O’Meara concurs that alien civilisations might also have committed transgressions like their human counterparts on earth but speculates that the nature and ramifications of their transgressions may be different from the human experience. He writes:

Sin in those races might not weaken the personality extensively (as Earth’s transmission of original sin does). Earth should not project a fallen condition, a proneness to all kinds of violence upon other planets. Nonetheless, when evil exists, it could have its own modalities, and there need not be a dull sameness about evil present in persons.¹⁰⁷

Nevertheless, the presence of rebellion and transgressions in alien civilizations might suggest multiple salvation histories, and, for many theologians, multiple incarnations – a subject that we will discuss in the next sub-section.

¹⁰² Keith Ward, *Christ and the Cosmos: A Reformation of Trinitarian Doctrine* (Cambridge: Cambridge University Press, 2015), 249-50.

¹⁰³ Wilkinson, *Science, Religion and the Search for Extraterrestrial Life*, 162.

¹⁰⁴ Robert John Russell, ‘Many Incarnations or One?’ in *Astrobiology: Science and Theology Meet Extraterrestrial Life*, Edited by Ted Peters. (Eugene, Oregon: Cascade Books, 2018), 304.

¹⁰⁵ Russell, ‘Many Incarnations or One?’, 304-5.

¹⁰⁶ Russell, ‘Many Incarnations or One?’, 305.

¹⁰⁷ O’Meara, *Vast Universe*, 26-7.

However, what if Lewis' intuition is generally right? What if there is indeed little evil in the universe – so scant that it is only found in planet Earth? Would the rebellion of the human couple have profound ramifications for the entire universe, or just planet Earth? Would Christ's death and resurrection only be for earth's rational inhabitants, and not for ETIs who have not followed in the footsteps of Adam and Eve? Does the new creation – the new heavens and the new earth – refer only to our planet and its atmosphere, and not beyond the Kármán Line?¹⁰⁸

What is the impact of human sin beyond the Earth? It is interesting that theologians such as Augustine have argued that the sin of the first human pair has very little adverse consequence for the rest of the planet. The Fall, Augustine taught, has had a very restrictive effect on the rest of creation. Reflecting on the existence of dangerous creatures such as poisonous snakes, Augustine maintained that they are such from the very beginning. Their nature did not change because of the Fall. They have their place in God's creation. In the *Literal Meaning of Genesis*, Augustine wrote:

[All things] have their own measures, numbers and destinies. So all things, properly considered, are worthy of acclaim; nor is it without some contribution in its own way to the temporal beauty of the world that they undergo change by passing from one thing to another.¹⁰⁹

What about the 'thorns and thistles' of Genesis 3:18? While most modern commentators see the appearance of thorns and thistles as a contrast to the original vegetation in the Garden,¹¹⁰ Augustine took a distinctively different view. He argued that these were already found in the original creation before the Fall. Their existence was not an impediment to the couple because they were not agriculturists. Only when they had to till the land after the Fall did the presence of thorns and thistles become a problem. Andrew Davison comments:

The picture that emerges from Augustine is of a wider world not changed by sin as to its nature: what changes is the human being, and therefore his or her interactions with it, not least with an emotional response now overlaid with foolishness and a fear of death.¹¹¹

To be sure, Augustine did not speculate on the ramifications of the Fall on the entire cosmos. However, based on his view of the effects of the human pair's

¹⁰⁸ The Kármán Line is the internationally recognised boundary marking the start of outer space. Named after the aerospace pioneer Theodore von Kármán, this boundary is set at 100 kilometres above Earth's sea-level.

¹⁰⁹ 'Literal Meaning of Genesis', III.16.25.

¹¹⁰ See John Wenham, *Genesis 1-15*. Word Biblical Commentary. Waco, Texas: Word Publishers, 1987), 82.

¹¹¹ Davison, *Astrobiology and Christian Doctrine*, 199.

rebellion against God, he would very likely have postulated that the cosmos is left largely unscathed.

Scholars who are of the view that the rebellion of the human couple has profound consequences for the entirety of God's creation often appeal to Romans 8:19-22, where Paul writes:

The creation waits in eager expectation for the children of God to be revealed. For creation was subjected to frustration, not by its own choice, but by the will of the one who subjected it, in hope that the creation itself will be liberated from its bondage to decay and brought into the freedom and glory of the children of God.

Space does not allow a detailed exegesis of this passage. However, to the question of whether the entire cosmos is affected by human sin, C. E. B. Cranfield has provided an elegant elucidation of the answer this passage provides.

What sense is there in saying that 'the subhuman creation – the Jungfrau, for example, or the Matterhorn, or the planet Venus – suffers frustration by being prevented from properly fulfilling the purpose of existence? The answer must surely be that the whole magnificent theatre of the Universe, together with all its splendid properties and all the varied chorus of subhuman life, created for God's glory, is cheated of its true fulfilment so long as man, the chief actor in the great drama of God's praise, fails to contribute its rational part ... just as all other players in a concerto would be frustrated of their purpose if the soloist were to fail to play its part.¹¹²

Multiple Incarnations?

The final doctrine that we will examine in this paper is that of the Incarnation. If the second person of the Trinity took up human flesh in order to redeem fallen humanity, did he also do likewise for non-human, alien flesh? If he did not, will he be able to truly bring salvation to fallen ETI, since, according to the famous Patristic dictum, that which is not assumed is not healed? Or is it enough for the eternal Word to assume only human flesh to bring about the redemption of the entire cosmos whose intelligent inhabitants are in some way affected by the human rebellion?

Theologians have offered different answers and perspectives to these questions, which can be divided into two groups. The first group comprises theologians who maintain that the second Person of the Trinity must indeed take up alien flesh in order to save extraterrestrial intelligences from the everlasting death resulting

¹¹² C. E. B. Cranfield, 'Some Observations on Romans 8:9-21. In Banks, R. (ed). *Reconciliation and Hope: Essays on Atonement and Eschatology* (Grand Rapids: Eerdmans, 1974), 413.

from sin. These theologians are of the view that the approach that God has taken to bring salvation to the human race is the only way and therefore it must be replicated across the universe. The second group of theologians maintains that one incarnation is sufficient for God to accomplish salvation not just for the human race but for the entire cosmos. The Son of God who is incarnate in Jesus Christ is also the cosmic Christ, whose death and resurrection on planet Earth are salvifically decisive and have cosmic ramifications.

One of the most prominent voices in the multiple incarnations camp is the neo-orthodox theologian of the last century, Paul Tillich. In the second volume of his influential *Systematic Theology*, Tillich asks how we should understand

... the meaning of the symbol 'Christ' in light of the immensity of the universe, the heliocentric system of planets, the infinitely small part of the universe which man and his history constitute, and the possibility of other 'worlds' in which divine self-manifestation may appear and be received ... The function of the bearer of the New Being is not only to save individuals and transform man's historical existence but to renew the universe ... The basic answer to these questions is given in the concept of essential man appearing in a personal life under the conditions of existential estrangement. This restricts the expectation of the Christ to historical mankind.¹¹³

Notwithstanding this fundamental premise, Tillich argues that we must also consider the possibility of multiple incarnations. 'At the same time,' he writes, 'our basic answer leaves the universe open for possible divine manifestations in other areas and periods of being. Such possibilities cannot be denied ... Incarnation is unique for the special group in which it happens, but not unique in the sense that other singular incarnations for other unique worlds are excluded.'¹¹⁴

Like Tillich, the Anglican scientist-theologian, John Polkinghorne, also postulates the possibility of multiple incarnations. If there were ETI, Polkinghorne reasons, 'and if they need redemption, we may well think that the Word would take little green flesh just as we believe the Word took our flesh.'¹¹⁵ Another Anglican theologian (of Anglo-Catholic and neo-Thomist persuasion), E. L. Mascall, also proposed the possibility of multiple incarnations, arguing that it is not inconceivable that Christ may have worked redemption also on other planets. In his Bampton Lectures of 1956, Mascall argued that if this were indeed the case, a communion of believers would be incorporated into Christ's body in ways analogous to Christian baptism. Mascall presents this as a possibility even

¹¹³ Paul Tillich, *Systematic Theology*. 3 Volumes. University of Chicago Press, (1951-1963), 2:95.

¹¹⁴ *Ibid.*, 96.

¹¹⁵ John Polkinghorne, *Science and the Trinity. The Christian Encounter with Reality* (New Haven: Yale University Press, 2004), 177.

though he concedes that ‘the arguments of both Ephesians and Hebrews rest upon the unquestioned, but also unformulated, assumption that there are no corporeal rational beings in the universe other than man.’¹¹⁶ Yet, his speculative mind urges him to ask:

Christ, the Son of God made man, is indeed, by the fact that he has been made man, the Saviour of the world, if ‘world’ is taken to mean the world of man and man’s relationships; but does the fact that he has been made man make him the Saviour of the world of non-human corporeal rational beings as well?

He replies: ‘This seems doubtful.’¹¹⁷ Thus, he extrapolates:

The suggestion which I wish to make, with all the tentativeness that is proper to a matter about which we are in almost complete ignorance, is that there are no conclusive theological reasons for rejecting the notion that if there are, in some other part or parts of the universe than our own, rational corporeal beings who have sinned and are in need of redemption, for those beings and for their salvation the Son of God has united (or one day will unite) to his divine Person their nature, as he has united to it ours.¹¹⁸

A number of Roman Catholic theologians have also favoured the multiple-incarnations view. In his erudite book, *Vast Universe*, the Dominican theologian, Thomas O’Meara, speculates: ‘As incarnation is an intense form of divine love, would there not be galactic forms of that love?’ Following his mentor, Thomas Aquinas, who postulated that any or all the three persons of the triune God could have become incarnated, O’Meara writes:

An infinite being of generosity would tend to many incarnations rather than one. The inner life of the divine self-surg-ing out of the three divine persons suggests multiple incarnations; reflection on the dynamic of Trinity and incarnation leads to community and activity and not to isolation. A succession of incarnations would give new relationships and new self-realisation to God ... Incarnations among extraterrestrials would not be competing with us or with each other.¹¹⁹

O’Meara was not the first contemporary Roman Catholic theologian to speculate about the possibility of multiple and successive incarnations. The eminent theologian of Vatican II, Yves Congar, also maintained that repeated incarnations

¹¹⁶ E. L. Mascall, *Christian Theology and the Natural Science* (London: Longmans, Green and Co., 1956), 45.

¹¹⁷ *Ibid.*, 37-8.

¹¹⁸ *Ibid.*, 39-40.

¹¹⁹ O’Meara, *Vast Universe*, 47.

are a possibility that Christian theologians must seriously consider. This is because, according to Congar, salvation has to do not just with an individual believer but also with how God works in different cultures.¹²⁰ The Roman Catholic theologian and astronomer at the Vatican Observatory, Christopher Corbally, also believed that multiple incarnations are possible, arguing that '[w]hile Christ is the First and the Last Word (the Alpha and Omega) spoken to humanity, he is not necessarily the only word spoken in the whole Universe.'¹²¹ And finally, we have Karl Rahner who after reflecting on the vastness of the universe could write that 'it cannot be proved that a multiple incarnation in different histories of salvation is absolutely unthinkable.'¹²²

Are multiple incarnations necessary to redeem the fallen cosmos? Must the Son of God take on a multitude of non-human natures for the salvation of ETI? The next group of theologians – whose position I share – answers this question in the negative. They maintain that the Word of God, the second Person of the Godhead, was incarnate only once as Jesus on Earth, and that this single incarnation is sufficient for the redemption of the entire cosmos.

Wilkinson offers several reasons why we should not be too hasty in entertaining the possibility of multiple incarnations. One reason is that it drives too wide a wedge between the human Jesus and the cosmic Christ.¹²³ He appeals to Colossians 1:1-18 which emphasises that it is in the Son incarnated in the human Jesus that God reconciles to himself 'all things.' In similar vein, and following the logic of Colossians, George L. Murphy argues that since the *Logos* is the universe's pattern-maker, Jesus as the fully incarnate *Logos* must be the foundation of the whole universe.¹²⁴ Pannenberg also draws a connection between the creative and salvific activity of the *Logos* who is incarnate in Jesus. In the second volume of his *Systematic Theology*, Pannenberg writes:

If the *Logos* is the generative principle of all the finite reality, that involves the difference of one thing from another – a principle grounded in the self-distinction of the eternal Son from the Father – then with the advent of ever new forms differing from what has gone before there comes a system of relations between finite phenomena and also between those phenomena and their origin in the infinity of God. As the productive principle of diversity the *Logos* is the origin of each individual creature in its distinctiveness and of the order of relations between creatures.¹²⁵

¹²⁰ Yves Congar, *The Wide World my Parish: Salvation and its Problems* (Baltimore: Helicon Press, 1961).

¹²¹ Quoted by Wilkinson, *Science, Religion and the Search for Extraterrestrial Intelligence*, 153.

¹²² Karl Rahner, *Theological Investigations 21. Science and the Christian Faith*. Trans. H. M. Riley (London: Dalton, Longman & Todd, 1988), 51.

¹²³ Wilkinson, *Science, Religion, and the Search for Extraterrestrial Intelligence*, 158.

¹²⁴ George L. Murphy, 'Cosmology and Christology', *Science and Christian Belief* 6 (1994), 109-111.

¹²⁵ Pannenberg, *Systematic Theology* 2:62.

Pannenberg concludes that ‘in Jesus of Nazareth the Logos at work throughout the universe became a man and thus gave to humanity and its history a key function in giving to all creation its unity and destiny.’¹²⁶ The Australian theologian, Mark Worthing, who has done much work in the dialogue between theology and science, could therefore argue for the sufficiency and centrality of the one incarnation thus:

If there is other intelligent life in the universe then God relates to it through Christ – the same Christ through whom God reconciles us to Godself. I do not believe Christian theology can posit a multiplicity of Christ and remain Christian theology.¹²⁷

What about the Patristic dictum ‘That which is not assumed is not healed’? Does not this important principle necessitate multiple incarnations, especially when we consider the possibility that ETI might not be biological descendants of Adam and Eve? This would be the case only if one adopts a narrow view of the incarnation. Many theologians have proposed a more expansive view of the incarnation which some have called ‘deep incarnation.’ Although this theological idiom is fairly recent, the idea itself is quite ancient, with origins that can be traced to the Patristic period. For example, Irenaeus states that due to the Fall of Adam, ‘God made a covenant with the whole world through Noah, pledging himself to all animals and humans.’¹²⁸ In a similar vein, Athanasius could write – generations after Irenaeus – that through the incarnation, the flesh of Jesus ‘was saved, and made free the first of all, being made the body of the Word.’ Because the Word took up flesh, it follows that ‘we, being similarly corporeal therewith, are saved by the same.’¹²⁹ According to Athanasius, then, in the incarnation, death and resurrection of Christ, all flesh is saved, not just humans. ‘For the presence of the Saviour in the flesh was the price of death and the saving of the *whole creation*.’¹³⁰ Thus, it is in this deep metaphysical sense that one must understand Gregory of Nazianzus’ formula: ‘That which was not assumed is not healed; but that which is united with God is saved.’¹³¹ To be sure, none of these theologians had ETI in mind when they wrote about the incarnation. However, the principle on the basis of which their statements are made can be applied to theological reflection on the significance of the incarnation for alien beings, and, indeed, for the entire cosmos.

¹²⁶ Ibid., 2:76.

¹²⁷ Mark Worthing, ‘Possibility of Extraterrestrial Intelligence as Theological Thought Experiment.’ In *God, Life, Intelligence and the Universe*, edited by Terrence J. Kelly and Hilary D. Regan (Adelaide: Australian Theological Forum, 2002), 83.

¹²⁸ Irenaeus, *Demonstration of the Apostolic Preaching*, 22.

¹²⁹ Athanasius, *Oration II, Contra Arianos, lxi*.

¹³⁰ *Ep. Ad Adeplhium*, vi.

¹³¹ Gregory of Nazianzus, *Epistle*, 101.

The modern articulation of this understanding of Christology in general and the incarnation more specifically is attributed to the Danish theologian, Niels Henrik Gregersen. Following the lead of the ancient writers, Gregersen argues that in the incarnation what is taken up is not just human flesh but creaturely reality itself. He explains:

the divine logos ... has assumed not merely humanity, but the whole malleable matrix of materiality ... In modern translation, *sarx* would cover the whole realm of the material world from quarks to atoms and molecules, in their combinations and transformations throughout chemical and biological evolution. Speaking in biblical language, my proposal of deep incarnation suggests that God's Logos united with Jesus throughout all dimensions of his life story ... Indeed, the Logos became Earth in Jesus.¹³²

This captures the heart of the statement by the great Roman Catholic theologian of the last century, Hans Urs von Balthasar, who once wrote that in the incarnation, God became world. Elizabeth Johnson expands on Gregersen's insight of deep incarnation to argue that Christ's resurrection will bring about the restoration of the entire world. Describing this concept as 'deep resurrection', the Roman Catholic systematic theologian writes: 'Drawing out Gregersen's insight into deep incarnation that unites the crucified Christ with all creatures in their suffering, I suggest we employ the idea of "deep resurrection" to extend the risen Christ's affiliation to the whole natural world.' Johnson envisions the eschatological salvation in comprehensive and cosmic dimensions: 'The coming final transformation of history will be the salvation of everything, including the groaning community of life, brought into communion with the loving power of the God of life.'¹³³

It must be emphasised once again that these theologians were not writing with ETI in view. Nevertheless, the relevance of their understanding of the incarnation to the present discussion is unmistakable. They not only offer a way of thinking about the incarnation that does not require the second Person of the Godhead to become incarnate in every non-human intelligent species across the vast universe. More importantly, they show that the Christian Faith – especially its doctrine of the incarnation – will not be discredited should evidence of the existence of ETI present itself. As Pannenberg has put it so succinctly:

It is hard to see ... why the discovery of nonterrestrial intelligent beings should be shattering to Christian teaching. If there were such discoveries, they would, of course, pose the task of defining theologically the relation

¹³² Niels Henrik Gregersen, 'Deep Incarnation: Opportunities and Challenges', in *Incarnation: One the Scope and Depth of Christology*, edited by Niels Henrik Gregersen (Minneapolis: Fortress Press, 2015), 176-177.

¹³³ Elizabeth Johnson, *Ask the Beasts: Darwin and the God of Love* (London: Bloomsbury, 2014), 208.

of such beings to the Logos incarnate in Jesus of Nazareth, and therefore to us. But the as yet problematic and vague possibility of their existence in no way affects the credibility of the Christian teaching that in Jesus of Nazareth the Logos who works throughout the universe became a man and thus gave to humanity and its history a key function in giving to all creation its unity and destiny.¹³⁴

CONCLUSION

In many ways, astrotheology is a speculative endeavour that seeks to imagine how Christian teaching could respond to the existence of ETI, for which there is, hitherto, no evidence. In this sense, astrotheology invites theologians to interrogate Christian doctrine by examining it from unusual and underexplored angles. However, astrotheology can also be seen as an exercise of Christian apologetics, inasmuch as it provides responses to challenges posed by secular authors such as Paul Davies. These authors seem quite confident that Christianity would collapse like a pack of cards should there be proof that ETI exists. Astrotheology shows that such schadenfrohd confidence is not only misplaced, but is also often based on distorted or reductionistic views of Christianity. Astrotheology is also a form of the longstanding dialogue between science and the Christian faith – a dialogue which theology has much to contribute and also much to learn from science, especially in relation to SETI. As Wilkinson has pointed out (with some paraphrasing), the questions that SETI raises can challenge Christian theology in many different ways. However, in the face of these challenges, ‘Christians have nothing to fear and a lot to welcome.’ Most importantly, ‘Christian theology affirms such curiosity, but wants to offer the contribution that there is more to the Universe than just the stars and SETI.’¹³⁵

Roland Chia

¹³⁴ Pannenberg, *Systematic Theology*, 2:76.

¹³⁵ Wilkinson, *Science, Religion, and the Search for Extraterrestrial intelligence*, 184.