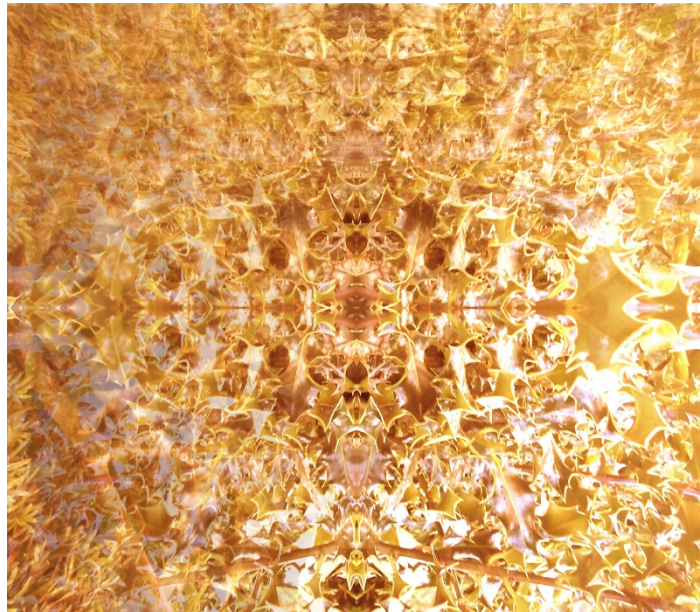


Gaia—The Null Hypothesis: Resonance XX (7.83 Hz) #Fibonacci Series



A Progressive Etude on Human Progress authored and illustrated with energy art and stereo photography by Stephanie Lynne Thorburn.

□

Supporting the fruition of Culture Web.

*

**

[#GlobalConsciousnessProject](#)



*

**

The following text is a revised version of “Gaia—The Null Hypothesis—Resonance XX” for the Journal of Space Philosophy. The original paper is on Academia.edu.¹

*Educational resources are central to the ethos of this work.
Footnotes include linked citations.*

Ethical Aims

This work is a progressive etude on human progress. The substance of the text has been actively shaped by Plato’s notion of the form of the good, the divine *logos*: *Republic*, Part VII, p. 508.

The values of equality, harmony, liberty and opportunity are explored in context of Mother Earth and ultimately the intelligent design of space habitats. This paper is dedicated to multidisciplinary education.

Competing Interests

My work is independently researched and self-funded. I am an existential humanist with a spiritual orientation. I am an advocate of space settlement and sustainable utilisation of space resources.



Key theorists, key concepts

This paper pays homage to
Da Vinci’s Vitruvian Man.²
Professor Gerard O’Neill—Space Studies Institute.³
Schumann Resonance theory.⁴
James Lovelock—Gaia theory.⁵
NASA—Artemis Lunar Gateway Project.⁶

A number of photographs of the *lotus: flower of life* within this document are presented in 3D *stereo pairs*. It is simple to view these images in three dimensions using an authentic owl stereoscopic viewer. Viewers can be obtained from the London Stereoscopic Company (formed in 1854).

Web links retrieved October 2020.

+++++

¹ [www.academia.edu/43824707/Gaias Null Hypothesis Homage to Leonardo da Vinci and Sir Isaac Newton An etude on Deism humanitarianism and natural philosophy FibonacciSeries](http://www.academia.edu/43824707/Gaias_Null_Hypothesis_Homage_to_Leonardo_da_Vinci_and_Sir_Isaac_Newton_An_etude_on_Deism_humanitarianism_and_natural_philosophy_FibonacciSeries).
² www.bl.uk/learning/cult/bodies/vitruvius/proportion.html. See also leonardodavinci.net’s overview of the Vitruvian Man (www.leonardodavinci.net/the-vitruvian-man.jsp) and Stanford University’s Semiotic Analysis of the Vitruvian Man (leonardodavinci.stanford.edu/submissions/clabaugh/today/health.html).
³ ssi.org/the-life-of-gerard-k-oneill/.
⁴ www.nasa.gov/mission_pages/sunearth/news/gallery/schumann-resonance.html.
⁵ J. Lovelock, *Gaia—A New Look at Life on Earth* (Oxford: Oxford Landmark Science, 2016, Updated 2020).
⁶ www.nasa.gov/specials/artemis/.



Part 1: Introduction

Humanity - Transience and Transcendence

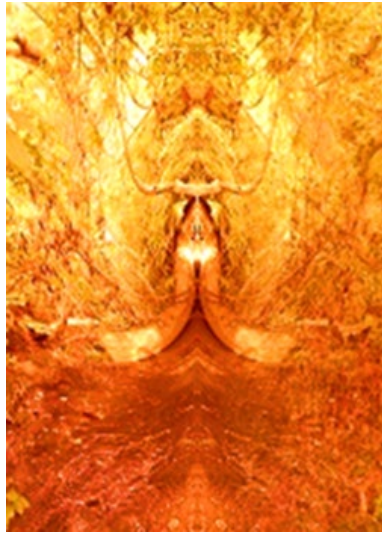
Gaia—The Null Hypothesis is a progressive etude on human progress, focussed on human *liberty and transformation*. The text comprises an overview of a solipsistic dream cautioning the well-being of Earth's future. Part 1: Humanity—Transience and Transcendence presents a lucid polemic, nurtured from the collective unconscious mind of Mother Earth. This vignette interjects an insight into the troubled heart of Gaia as we reach beyond AD 2020 (in the year of our Lord).

The author is a Reiki Master, experiencing an existential crisis. Her analogy of Gaia's ailing health provides a mirror onto the soul of the people of Earth—there is no doubt the human race is in great distress due to the global pandemic of COVID-19.

Deeply imbued within the Chi Master's mindful dream is the notion of Mother Earth's wrath in relation to the destructive tendencies of humankind. Gaia thus posits a rhetorical null hypothesis as a scornful caution, claiming that *homo sapiens* is not her child; humans might be perceived as *persona non grata*. The author's ethical challenge is to prove the maternal relationship of humanity to Gaia through demonstrating attributes of *peace, equality, harmony* and *hope through healing division*. *Homo sapiens* must prove that we are not exerting merely a degrading, detrimental influence within the organic living world of Goddess Gaia. *Science and spirituality* are juxtaposed concepts throughout this paper in relation to the twin themes of human conquest versus creative virtue and compassion.

The allegory of Gaia is narrated by Magnum Opus, an omnipotent, animated embodiment of da Vinci's mechanical butterfly, an emissary of divine spirit. Humanity's nascent heroes in our brave new world are the creatures who reign on Earth, capturing hearts and minds. Humanity is finally beginning a period of Renaissance in our appreciation of nature to re-establish environmental homeostasis. Earth's primordial soul resonates with the female life-bearing energies of Gaia.

The golden ratio depicting the energetic frequency of global consciousness is encapsulated adeptly through the theory of *Schumann Resonance* (SR)⁷ to honour the representation of Gaia's genetic heritage. Innately, Gaia is evoked in modern culture and traditional Greek mythological discourse as Mother Earth. The employment of the term *resonance* is therefore intentionally rhetorically duplicitous, drawing together SR theory with human emotional reciprocity. SR describes Gaia's electromagnetic sound frequency, formed in the cavity between Earth and the ionosphere. The current atmospheric measurement is 7.83Hz. This measurement represents the energetic pulse of the Earth-ionosphere space.



Gaia—Embodied as Wisdom: Sophia.

Homage to the Enlightened Masters

Uniting Art, Science and Humanism.

This allegorical work pays homage to the legacy of Leonardo da Vinci. Equally, the author's etude on Gaia has been inspired by the archetypal Enlightenment astronomers Newton, Copernicus and Galileo. The forefathers of the modern natural sciences pioneered an empirical approach to science and natural philosophy. The heliocentric model of the Earth, sun and solar system fostered a less anthropomorphic world ontological perspective. Isaac Newton⁸ was fascinated by alchemy; further, his theological studies were both original and radical for this time. His notion of divine presence was governed by the laws of a mechanistic universe, although this metaphor serves as rather a cliché of his pioneering work in physics and astronomy. Fortunately, Leonardo da Vinci's Renaissance masterpieces harmonise natural science with soulful artistic analogy by virtue

⁷ www.heartmath.org/gci-commentaries/influence-of-geomagnetism-and-schumann-resonances-on-human-health-and-behavior/.

⁸ www.youtube.com/watch?v=Ecg037cBOhU.

of his creative genius. His aesthetic rendering of the mathematical laws of the natural world has over time, been likened endearingly by some critics to the philosophy of Deism. Nonetheless, da Vinci lived over a hundred years prior to the Newtonian scientific era. Leonardo da Vinci and Isaac Newton may be perceived as multidisciplinary intellectuals, whose astute insights into nature and divine order cannot be encapsulated solely through the precepts of Deism.



Vitruvian Man Represented as a Native Shaman.

Leonardo da Vinci's Vitruvian Man

The Renaissance master's creative virtuosity remains poignant, nuanced, ambiguous and non-reductionist in essence.⁹ Notably in the introductory chapter of his biography *Leonardo da Vinci*,¹⁰ Sigmund Freud conjectures that Leonardo, in his final hours, may have reproached himself for not having fulfilled his duty to his art in the eyes of God. It is not known if this story emanating from Vasari has remained credible through the ether of time. As Freud observes, Leonardo was respected by his contemporaries, although his humble personality was not fully understood. Clearly, he was an artist absorbed by his craft, who believed that the natural world represented a divine fractal tapestry, reflecting universal laws. His work forms a tribute to the majesty of intelligent design, enhanced by 3D linear perspective.

⁹ Da Vinci, "Discussion on the Themes of *Deism* in the Work of the Renaissance Master." See World Union of Deists, "What was Leonardo da Vinci's Religion?," lecture given at the Museum of Science and Industry, www.deism.com/davinci.htm. Source: Robert Iliffe, *Newton's Religious Life and Work*, Newton Project (2013), www.newtonproject.ox.ac.uk/his-life-and-work-at-a-glance.

¹⁰ Sigmund Freud, *Leonardo da Vinci: (2017), McAllister Editions, ch. 1, 2*. Full edition: Sigmund Freud, *Leonardo da Vinci—A Memoir of his Childhood* (London, Routledge Classics, 2001). First published in the UK by Kegan Paul, 1922. International Library of Psychology.

Da Vinci was a polymath, with a complex Gestalt artistic awareness. Leonardo's depiction of the proportions of the ideal Renaissance man appropriates a recursive anatomical algorithm, touched by the hand of divine intelligence. His timeless notion of the archetypal Vitruvian Man offers a visual mirror upon humanity's kinaesthetic relationship with *sacred landscapes (Mother Nature), sacred architecture* and *the cosmos*.¹¹ Da Vinci's Vitruvian vision represents the innate primal reciprocity that resides between Mother Earth and humankind. Yet, his conception of the canon of human proportions presents a complex semiotic. His icon of mankind connects the domains of natural aesthetics with humanitarian ethics. A circle of humanitarian service thus engulfs the human subject, symbolising maternal, nurturant and transcendent humanitarian values.

The metaphor of Vitruvian Man therefore mollifies Gaia's polemic critique in context of the null hypothesis explored in the introduction of this paper. The Vitruvian depiction of humankind reaffirms our connection to Earth's placenta, nurturing our capacity for humanistic healing. The poignant crafting of this iconic vignette serves to appease my fears regarding humanity's increasing estrangement from Gaia.

Leonardo's hand was guided by Roman architect Marcus Vitruvius Pollio.¹² Marcus Pollio's work "De Architectura" forms a classic treatise integrating the domains of engineering with architecture. Further, Vitruvius was likewise a gestalt polymath; De Architectura thus also interjects fruitful insights from the evolving spheres of philosophy, medicine and mathematics. Vitruvius lived during the 1st century BC and was committed to the conceptual integration of the arts, sciences and natural law. Vitruvius perceived the human body as an articulation of creation's most complex work of art imbued within nature. Vitruvius has therefore become renowned for his conviction that the body in a similar vein to architecture, should be stridently *attractive, functional, and constitutionally strong*.

Vitruvius's original design demonstrated the beauty inherent to the perfunctory sculpture of the healthy male body. Vitruvius believed that the body itself was constructed as a living rulebook, containing fixed and faultless laws, set down by nature. I am, however, disenchanted with Vitruvius Pollio's seminal, yet slightly soulless, deterministic observation on the formulaic quintessence of natural beauty pertaining to the organic world. SR offers a juxtaposed perspective, demonstrates the relative autonomy of Mother nature.

¹¹ British Library, *Roman Architect Vitruvius*, www.bl.uk/learning/cult/bodies/vitruvius/proportion.html. Da Vinci's iconic illustration of the strength and perfunctory beauty of the male body was based upon Vitruvius's original design. (Original source archived November 2020).

¹² www.bl.uk/learning/cult/bodies/vitruvius/proportion.html. For further information on the biography of Vitruvius Pollio, with informed commentary on his magnum opus work, "De Architectura," see Ancient World History encyclopaedia: <https://www.ancient.eu/Vitruvius/> Archival Library of Vitruvius's Works: penelope.uchicago.edu/Thayer/E/Roman/Texts/Vitruvius/home.html.

Winfried Otto Schumann's theory corresponds with the harmonic principle of vibration and equally the principle of polarity identified within the Greek philosophy of Hermes Trismegistus.¹³ SR is theoretically galvanised by the contrast between the negative 'yin' charge of Mother Earth's surface, encapsulated within the positive charge of the ionosphere. The electromagnetic resonance of Earth thus expresses Gaia's essentially feral, mercurial humours. The natural world is literally entranced by her majesty, through a process of anatomical entrainment. Sadly, *homo sapiens* shares Gaia's capricious tendencies.

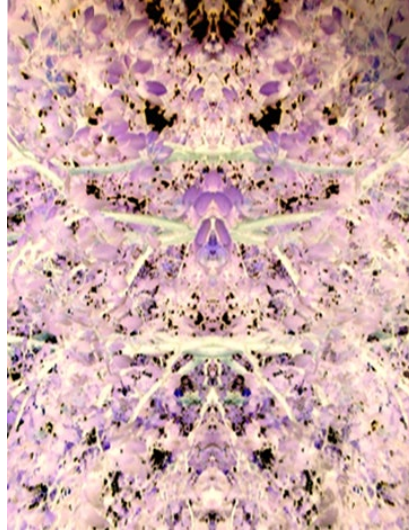
Leonardo's own perception of aesthetic beauty was formed substantively through the adoption of a bird's-eye view of the Earth. His notebooks¹⁴ reveal that he was perhaps mesmerised most profoundly by the wild-crafted organic grace of flying creatures, perceived as prototypes for enigmatic flying machines! i.e., the dragonfly and the mechanical butterfly, which blooms into a beautiful dimorphous silhouette. The dragonfly¹⁵ has historically been ascribed equal value and it was venerated within the canon of Greek mythology.

Certainly, the gift of flight offers the anatomical advantage of unfettered freedom and liberty. Overwritten in the hermeneutic symbology of Vitruvian man is, however, a distinctly non-secular humanitarian icon. Leonardo's classicist design axiomatically imbues the sacrifice of Christ at the crucifixion into his representation of the passionate divine matrix of mankind. The cruel, imperfect and flawed nature of the human condition clearly offended the sensibilities of the protagonists of the Renaissance, who cherished the concept of organic perfection. Yet even Leonardo's Vitruvian Man is not drawn with absolute symmetrical precision—he remains endearingly imperfect.

¹³ www.sacred-texts.com/eso/kyb/kyb04.htm.

¹⁴ www.vam.ac.uk/articles/leonardo-da-vincis-notebooks.

¹⁵ www.youtube.com/watch?v=xy86ak2fQJM.



Kundalini Butterfly

Da Vinci's representation of Vitruvius Pollio's quintessential male is curiously reminiscent of a Kundalini butterfly, possessing infinite potential for self-realisation. Yet, as a unified people we have still not ventured outside our own ailing planetary atmosphere of claustrophobic disharmony. We have not fully realised da Vinci's vision of human progress in relation to scientific progress or humanitarian ethics.

The author's prophetic vignette therefore concludes with the issuing of an ultimatum from Goddess Gaia. Mother Earth warns that the consequences of failing to connect with peace, harmony and healing energies on Earth will be banishment to a nascent lunar mining colony via a *Lagrange*¹⁶ settlement within the solar system.... This outcome would be, for the author, partially a blessing, as she is disillusioned with the modern Western world. She perceives the twenty-first century as dominated by the digital matrix; there is a paucity of organic aesthetic appreciation, with capitalism usurping fraternal values. Escaping life on Earth would offer the author a unique opportunity to engage with a transcendent trajectory from space. She could escape the vernacular experience of daily life, overcoming the myopia of our anthropomorphic worldview.



By virtue of the narrative themes imbued in this tale, the author is revealing that she is in fact an advocate of the innovative, seminal work of Princeton University Professor Gerard K. O'Neill and his Space Studies Institute, founded in 1977.¹⁷ Professor O'Neill proposed that the survival of humankind was interdependent on lunar industrialisation and the harnessing of space-based solar power. O'Neill advocated the design of

¹⁶ www.youtube.com/watch?v=t3JfHp9ls8M&t=3s.

¹⁷ Space Studies Institute: Prof Gerard O'Neill, ssi.org/the-life-of-gerard-k-oneill/.

free-space cylinder settlements, stabilised potentially at Lagrange Points 4 and 5.¹⁸ One of Professor O'Neill's greatest fears is expressed succinctly in "The High Frontier—Uncut," a Space Studies Institute documentary.¹⁹ O'Neill was determined that the representation of his lifework would be immortalised within an academic genre and would not instead be transposed into fictional allegory. Yet, his vision of lunar mining to assist in the progress of humankind as a collective has still not been achieved.

The medium of fictional allegorical prose offers a powerful representation of reality in relation to political issues that may not be broached utilising an exclusively intellectual genre. Da Vinci's artistic conceptualisation of the archetypal Vitruvian Man has, after all, served as a timeless analogy of humanity's somatic qualities and sociocultural values. The Renaissance master has seamlessly juxtaposed scientific rationality with aesthetic beauty—qualities valued equally by those seeking to cultivate nascent space habitats.

As we are in 2021, the concept of Hegelian dialectical²⁰ progress may now be problematic. Traditional Hegelian dialectical philosophy bears a resemblance to the hermetic principle of organic polarity. Yet, we are living in a time characterised by uncertainty and cultural complexity; the politics of human progress is as multifaceted as a Platonic crystal. There are always far more than two sides to sociopolitical discursive issues, as humanity faces global crises at many levels. The subtly interwoven concepts of *narrative equity* and *artistic analogy*, as demonstrated by dystopian 20th-century authors such as Orwell and Huxley, explore a new vocabulary of emerging values. There is power imbued in artistic depictions that enfranchise humanity with a collective world vision integrating political commentary, with the increasing sophistication of the natural sciences.

Gaia—The Null Hypothesis offers a modern-day odyssey into the heartbeat of Mother Earth's mortal ecology of soul. The text ultimately overturns the negative connotations of dystopian fiction, serving to unite the natural world with the nascent space sciences to ensure a more harmonious future on Earth. As a collective, a unity of nations may ultimately need to gravitate towards space settlements to appease the advancing effects of global warming, pandemics and an overcrowded Earth. This currently fictional vision may become an imminent reality. We have indeed generated considerable pollution over the past century. Capitalism and the advent of modern science have led to a less reverent attitude towards our interdependent relationship with Gaia. Ethically, it is imperative to ensure that the next chapter in humanity's future empowers our collective potential, through wise, egalitarian resource use.

¹⁸ Gerard K. O'Neill, *The High Frontier—Human Colonies in Space* (New York: William Morrow, 1976; independently republished 2019). See also John Mankins, *The Case for Space Solar Power* (Houston: Virginia Edition, 2014), www.amazon.co.uk/Case-Space-Solar-Power-ebook/dp/B00HNZ0Z96/.

¹⁹ www.youtube.com/watch?v=Pdtc9eXenJc.

²⁰ plato.stanford.edu/entries/hegel-dialectics/.

No doubt, Professor O'Neill's original proposal for the development of self-sustaining space colonies requires careful modernisation both socio-politically and in respect to scientific progress. Nascent space technologies have the capacity to enfranchise the human imagination and human resonance. In 2020, Space.com reported that *Starlink* SpaceX is launching a constellation of satellites to offer broadband internet service,²¹ honed towards providing greater unified global telecommunications. The new service is initially being proposed for military use and subsequently, it will be extended to global citizens. Space tech therefore has a role to play in transforming the collective future of Gaia's inhabitants. Aptly enough, the inspiration behind Elon Musk's Starlink has been credited to the humanistic novel by John Green titled *The Fault in Our Stars*.²²



In summary, it remains to be seen whether newly emerging space settlements could in theory or practice ever demonstrate *eurythmia*. As discussed, the Roman Architect Vitruvius²³ perceived eurythmia as the reflection of the laws of harmony and the beauty of nature encapsulated within organic design. His concept of eurythmia is equally applicable to the structure of buildings and the human body. Applying these principles to the development of Lagrange space settlements is relevant, because Gerard O'Neill was committed to the construction of large spherical rotating habitats in free space. Crucially, the definition of the Latin word eurythmia or eurythmy is closely equated with harmony of proportion in architecture and implies graceful movement. O'Neill's romantic vision of counter-rotating spherical space habitats evolved into his design for Island Three, comprising two third-generation space cylinders forming artificial living worlds. O'Neill's cylinders attempt to reproduce Gaia's biosphere in high orbit, positioned at the Earth-Moon L5 point.²⁴

²¹ www.space.com/spacex-starlink-satellite-internet-service-2020.html.

²² John Green, *The Fault in Our Stars* (London: Penguin, 2013), www.amazon.co.uk/Fault-Our-Stars-John-Green/dp/0141345659/.

²³ www.bl.uk/learning/cult/bodies/vitruvius/proportion.html.

²⁴ <https://space.nss.org/o-neill-cylinder-space-settlement/>.

Certainly, bioengineering a sustainable rotating O'Neill cylinder that simulates Earth gravity would be exceptionally challenging. The manifestation of orbital space settlements would truly represent a complex life science, equivalent to the construction of Renaissance architecture, a sacred cathedral or the Egyptian pyramids! These examples of design virtuosity are not entirely comparable, however, because space settlements evoke an animate habitat. Designing fecund space habitats could therefore offer the opportunity of extenuating Vitruvius's concept of eurythmia into a less formulaic construct.

The development of space industrialisation and ultimately space orbital settlements should therefore not be merely the responsibility of the scientific community as humanity matures in the twenty-first century. The science of eurythmia in the context of lunar habitats requires interdisciplinary mastery. The international space community needs to move beyond perfunctory, theoretical conceptualisations of sci-fi colonies manifest in space.

The first O'Neill cylinders constructed should truly be named eurythmia, reflecting the virtues of equality, harmony, life, liberty and opportunity. Living within Island Three, O'Neill's first third-generation fractal space habitat, would offer a more expansive perspective on Gaia's fragility, beauty and homeostatic, harmonic resonance. Simulation of SR would benefit human health in space, stimulating equally the gradual development of deep space ecology. As O'Neill acknowledged, management of daily life outside the remit of our own biosphere could nonetheless become equivalent to a divine punishment in a low-gravity atmosphere, with greater exposure to radiation. Strategic resource planning is essential to establish a resilient future for humankind in space.



Concluding Reflections: Ethical Dimensions

It would be remiss not to offer an independent perspective on the ethical dimensions of my essay. I can envisage Gaia smiling as I author the closing paragraphs of this section of my paper. Mother Earth has evolved over 4.5 billion years, organically. Her soul is believed to embody the quintessence of wisdom—perceived in Greek culture through the

deification of the Goddess Sophia. Over time, Sophia has acted as an independent witness to humanity's maturation. She has become mindfully aware that we do not manage the challenge of sociocultural uncertainty with equanimity; equally, we do not like entropy (i.e., organic or social disorder). Above all, we as a united people feel intimidated when contemplating the notion of mortality in the twenty-first century. Our salubrious lives on Earth are characterised by an increasing sense of human transience.

The infrastructure of this paper has been sculpted by Plato's form of the good.²⁵ Plato's notion of the form of the good encompasses cerebrally defined ideals that remain consistent over time. *Homo sapiens* have over many centuries yearned for *perfect beauty, truth, knowledge, justice* and the *perfect home*—even if our home will no longer be located solely on Planet Earth....

It should not be necessary to iterate that elitist notions of aesthetic beauty historically have served to subjugate the values of equality and diversity of human beings, and I would add, of the natural world. Since the Enlightenment, our search for immutable laws within the domain of science might have led to an outcome of methodological reductivism. However, the advent of quantum theory in the 1920s has superseded the mechanistic paradigm of the universe and replaced the notion of empirically immutable laws with the concept of relative truth and indeterminacy in the scientific realm. The sentient mind cannot therefore be perceived as a reductive computational algorithm or a Newtonian clock....

If we are truly to succeed in writing the next chapter in our collective history as living souls, we need to embrace the coldness, the indifference and the hostile conditions of outer space with less romantic, idealised preconceptions. Ethics of environmental sustainability apply equally to the domain of space. Transitioning from exploration of space towards space settlements requires the cultivation of collaborative expertise, creative thinking, constitutional resilience and a healthy respect for the natural, elemental world. Most importantly, if we do establish space settlements in the next century, we must not seek to view this accomplishment as an act of conquest. The term *space colony* should therefore be modified in a postmodern context, to encompass the concept of the fruition of a multicultural, egalitarian space community.

I note that critics continue to view O'Neill's vision of space settlements in free space in a negative light, due to humanity's inability first to manage the resources of Gaia efficiently. Further, developing O'Neill cylinders would require the transportation of vast

²⁵ 1000wordphilosophy.com/2018/02/13/platos-form-of-the-good/. For further discussion on Plato's form of the good, see the work of the theologian Fr. Robert Splitz (strangenotions.com/5-human-desires-that-point-to-god/). There is a feature on the work of Splitz, authored by Steven Hemler. Source: *Reason, Faith & Dialogue*. On the Platonic triad of truth, beauty and justice, see catholicgnosis.wordpress.com/2014/11/10/the-platonic-triad/.

quantities of raw resources from the lunar surface and asteroids.²⁶ Similarly, cultivating a settlement on Mars might still be considered at this time to represent an ambition that stretches our present technological capacities. Indeed, the process of human exploration in view of the cultivation of settlements on Mars would involve mediation of many practical and physiological obstacles. I simply hope that NASA's Lunar *Artemis* program continues to receive sufficient funding and is successful in at least establishing the initial infrastructure to inspire the development of deep space habitation in the twenty-first century.²⁷

Since I first completed this vignette paper, the space industry has continued to evolve. In February 2021, The European Space Agency announced a recruitment drive, with an orientation upon attracting more women and disabled candidates, with the prospect of future missions focussed on exploration of the Moon and ultimately Mars.²⁸ Greater equality and diversity of opportunity within the aerospace industry would be truly welcome to realise a Renaissance in human space exploration, leading progressively towards the possibility of nascent space settlements.

Recent press reports affirm plans to begin constructing the first sustainable cities on Mars potentially by 2054,²⁹ The ABIBOO design studio presented proposals for 'Nuwa' at the Mars Society convention in October 2020, which was attended by SpaceX CEO Elon Musk, George Whitesides from Virgin Galactic, and Jim Bridenstine from NASA.

The network of multi-disciplinary academics and designers includes an international team of scientists headed by astrophysicist Guillem Anglada. Thus, specialists representing the domains of architecture, astrophysics, space engineering, astrobiology, astrogeology, chemistry and psychology have contributed to the project. The proposed capital city situated at Tempe Mensa on Mars, if brought to fruition would be home to a population of some 250,000, with residents dwelling on the Red Planet from circa 2100. The journey to Mars would take 1-3 months, with designs for the sustainable city based on scientific research from the SONet network and The Mars Society.

²⁶ "Elon Musk Critiques Jeff Bezos' Vision for Space Colonies," *Business Insider*, May 2019, www.businessinsider.com/elon-musk-criticises-jeff-bezos-vision-of-space-colonies-2019-5.

²⁷ NASA's Lunar Exploration Overview, Artemis Plan: September 2020. www.nasa.gov/sites/default/files/atoms/files/artemis_plan-20200921.pdf.

²⁸ "European Space Agency Launches Recruitment Initiative," *Guardian*, February 17, 2021. www.theguardian.com/science/2021/feb/17/europe-launches-recruitment-drive-for-female-and-disabled-astronauts.

²⁹ Sieeka Khan, "'Nuwa', the First City on Mars, Will Be Ready in 2100, Developer ABIBOO Reveals Plans and Function," *Tech Times*, March 21, 2021. www.techtimes.com/articles/258250/20210321/nuwa-the-first-city-in-mars-will-be-ready-in-2100-developer-abiboo-reveals-plans-and-function.htm. See also the National Space Society's reproduction of Gerard O'Neill, "The Colonization of Space," *Physics Today* 27, no. 9 (September 1974): 32-40, which outlines the science & logistics of his cylinder habitats: space.nss.org/the-colonization-of-space-gerard-k-o-neill-physics-today-1974/.

Professor O'Neill's research has evidently been rather prematurely dismissed. His designs for free-space enclosed space habitats were prompted by both environmental and socioeconomic concerns in relation to human progress. His humanitarian vision has been cultivated with a mindful awareness of many primal physical and emotional facets of the human condition, offering a relatively protected surrogate home for humankind.



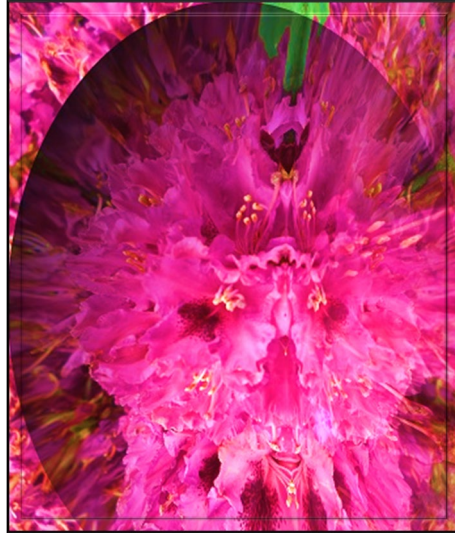
This work contains references and educational resources including organisations promoting global consciousness. See the Overview Institute.



Pagan God Thor Demonstrates the Principles of SR.

This work represents a vignette chapter from Stephanie Lynne Thorburn's new work: *Humanity, The Renaissance Mind, Selfish Soul*. Book One: The Fibonacci Series, published October 2020. See: https://www.amazon.co.uk/Humanity-Renaissance-Selfish-Fibonacci-Masters-ebook/dp/B08L9LX7X3/ref=sr_1_1?dchild=1&keywords=stephanie+lynne+thorburn&qid=1616429762&sr=8-1

The anthology explores the rich epistemological lineage of natural philosophy, natural religion and humanitarian thought. Homage is paid to 'Enlightened masters' Leonardo da Vinci, Vitruvius Pollio and Sir Isaac Newton, to highlight the relevance of their work to contemporary culture and space sciences, (including space architecture). The book evokes a conceptual re-sculpting of O'Neill's original space habitat designs, employing the notion of the ideal canon of proportion wisely, proposing a more sustainable interconnected matrix of space settlements. The text draws from the fruitful tenets of Al Globus's paper: "Space Settlement—An Easier Way," National Space Society, San Jose State University, June 2016. Source: space.nss.org/wp-content/uploads/Globus-Easier-Space-Settlement.pdf.



Cover design for *Humanity—The Renaissance Mind, Selfish Soul*

Further reading recommendation:

Professor Gerard K. O'Neill drafted a succinct summary of his vision for space colonisation, published in *Physics Today* in 1974, just prior to the fruition of his magnum opus text *The High Frontier: Human Colonies in Space* in December 1976. O'Neill's concept of human progress was influenced by the work of Konstantin Tsiolkovsky, who also believed that planets were not necessarily the best environments to evolve space settlements. His first two-cylinder designs are proposed to house circa 10,000 people, simulate Earth gravity and offer protection from solar rays by virtue of the depth of the atmosphere and through the land and steel supporting structures. O'Neill's colonies were theorised as ideally offering humanity "an abundance of food and clean electrical energy, controlled climates and temperate weather."³⁰

Appendix: Educational Resources

Astropedia: Unified Geological Map of the Moon (astrogeology.usgs.gov/search/map/Moon/Geology/Unified_Geologic_Map_of_the_Moon_GIS_v2) April 2020. Source: *Lunar and Planetary Cartographic Catalogue*.

This is the first complete map of the lunar surface, produced by scientists from USGS Astrogeology Science Centre, in collaboration with NASA and the Lunar Planetary Institute. Precis of key information:

³⁰ O'Neill, "Colonization of Space."

This new work represents a seamless, globally consistent, 1:5,000,000-scale geologic map derived from the six digitally renovated geologic maps. The goal of this project was to create a digital resource for science research and analysis, future geologic mapping efforts, be it local-, regional-, or global-scale products.

Source credit: USGS, Astrogeology Science Centre. *Science for a Changing World* (www.usgs.gov/special-topic/science-a-changing-world).

Practical Application

The lunar map, called the “Unified Geologic Map of the Moon,” will serve as the definitive blueprint of the moon’s surface geology for future human missions and will be invaluable for the international scientific community, educators and the public-at-large.

Schumann Resonance

For contextual information on **SR theory** and the impact of SR on human health, see Bioregulation Medicine Institute, “Schumann Resonances and Their Effects on Human Bioregulation,” www.brmi.online/post/2019/09/20/schumann-resonances-and-their-effect-on-human-bioregulation (September 2019).

Schumann initially published his theory in 1952 in *Technische Physik*

Schumann resonances may be defined as “global electromagnetic resonances, generated and galvanised by lightning discharges in the cavity formed between the Earth’s surface and the ionosphere.”

NASA exploration of SR has focussed on Earth’s weather and the anatomical and molecular study of the atmosphere. See NASA—*Artemis Lunar Gateway Project*. August 2019; NASA Artemis Programme, “Protecting Astronauts from Radiation,” www.nasa.gov/feature/goddard/2019/how-nasa-protects-astronauts-from-space-radiation-at-moon-mars-solar-cosmic-rays.

See also Business Insider, “Jeff Bezos Proposes Floating Colonies with Weather as Good as Maui” (May 2019), <https://www.businessinsider.com/jeff-bezos-proposes-floating-colonies-with-weather-as-good-as-maui-2019-5>.

Copyright © 2021, Stephanie Lynne Thorburn. All rights reserved.



About the Author: Stephanie Lynne Thorburn is an author, energy artist and Reiki Master. She holds an MA in Sociology: Qualitative Research, Goldsmiths University UK and a BSc (Hons) in Sociology/Psychology. She has undertaken a doctoral foundation in Educational Research.

Stephanie has authored over 20 Kindle books, including the best-selling works *Mother Earth's Beatitudes* (2019) and *Progressive Etudes on Human Progress—Nanotechnology and Space Sciences*. Other digital titles include *World Ontology*, *Vraisemblance: Intelligent Design*, and her independently researched 21-year graduate research thesis, *Creativity, Ethics and the Doctoral Research Act* (2017). She is currently working on her *Alpha Omega Codex #Fibonacci Series*. Stephanie is on the executive of Space Renaissance and is a member of Space Studies Institute. She has contributed several articles to *Journal of Space Philosophy* since its inception in 2012.

Stephanie Lynne supports continuing academic professional development. She has completed over 300 hours of CPD study with the Open University, Open Learn UK. Her recent courses include The Enlightenment, Engaging with Educational Research, Natural Intelligence, Renaissance Art in Venice, Distributed Paradigms, and Graduate Research Skills for Science, Technology and Maths. She has earned a digital badge award for multidisciplinary study.

For an overview of Stephanie Lynne's CV and publications, see Goldsmiths University Alumni, "Progressive Etudes" Guest Post, sites.gold.ac.uk/goldlink/guest-post-progressive-etudes/ and Stephanie Lynne Thorburn's Kindle publications page (www.amazon.co.uk/Stephanie-Lynne-Thorburn/e/B007Y3OG2Y).

Editors' Notes: We advise readers throughout the global Space community to approach Stephanie Thorburn's article by taking time to absorb its complex content with an open mind to follow her interdisciplinary and transdisciplinary mergings of science, technology, mythology, humanism, spirituality, and future Space contemplation. This paper represents a systems approach to those disciplines, reaching for harmony between the natural world and the world of *homo sapiens*, and showing the contemporary relevance of historical philosophers, dreamers, and planners such as Leonardo da Vinci, architect Vitruvius Pollio, and Sir Isaac Newton. Her overall message is that there is a powerful potential in art to galvanise social change. For many of today's, and human history's, dystopian experiences there are intellectual and emotional pathways to utopian outcomes, and Space development futures will be important in that movement. **Bob Krone and Gordon Arthur.**