

STANKKEVECH

Magnetic Anomalies in the Arctic
Colonial Resource Extraction, Meteoric Cults,
and the Rare Earth Age

In 1569, cartographer Gerardus Mercator published his trademarked flattened globe as a bounded, rectangular mathematical projection. Accurately rendering space along a horizontal axis, the East-West vector privileging expedited colonial expeditions to the New World. In the margins of his map, beyond the fantastical sea creatures and mythical gods peering over *terra incognita*, Mercator included an inset of the North Pole region. Of course, at the time no one had any empirical data of this "land beyond the land beyond," however by sheer delineation of space based on a sphere, the mathematical system of the map necessitated that such a space existed and thus essential to include as a rendering. Aside from its grid-based design revolutionizing navigation and trade (still used today from shipping routes to Google Maps), Mercator's map also included the most advanced data visualization—albeit erroneously interpreted. It had long been held as passed down through the literature that at the celestial North Pole stood a massive lodestone or "iron mountain." In the sixteenth century, empirical observation demonstrated that compasses all around the world always pointed north. But since the geological discipline had not yet advanced far enough to reveal that the Earth's molten core made the

"It all began, old Ammi said, with the meteorite."

H.P Lovecraft.
The Colour Out of Space, 1927.

"The Sumerian word AN.BAR, the oldest word designating iron, is made up of the pictograms 'sky' and 'fire.' [...] We shall do well to bear in mind the early religious significance attaching to aeroliths. They fall to earth charged with celestial sanctity; in a way, they represent heaven. This suggests why so many meteorites were worshipped or identified with a deity. [...] Primitive peoples worked with meteoric iron for a long time before learning how to use ferrous ores. [...] This was how the Greenland Eskimos made their knives

1 The legends in the map explain the historical sources, the sources of the data collection, and label the different poles. See: *Septentrionalium terrarum descriptio. Per Gerardium Mercatorem cum privilegio*. 1595. Library and Archives Canada. Mikan no. 3682241, and *Nova et Aucta Orbis Terrae Descriptio ad Usum Navigantium Emendate Accommodata*. 1569. Bibliothèque Nationale de France.

entire planet a magnet, savants mused that a massive magnetic mountain at the top of the world was generating all the attraction. By the time Mercator was filling in his grid however, he noticed a strange magnetic anomaly when aggregating various field recordings from sailors who brought back their data. According to these accounts, compasses did not actually point directly to the North Pole. As a solution for such declination of the magnetic field, Mercator posted a second magnetic mountain, this time in the Behring Strait. Rendered in full color in 1595, the resulting map was the first cartographic document ever to solely focus on the Arctic. Eventually the dual-mountain theory melted away, but the metallic attraction of the Magnetic North never completely subsided. By examining the Canadian Arctic¹, one can trace a complete *phylogenesis* of metallurgy, starting with the nomadic smiths of the Inuit gleaned meteoric iron for weapons and domestic use, through the birth of cybernetics and networked warfare in the Cold War's Distant Early Warning Line, to the speculative market of Rare Earth Elements in the twenty-first century.

Colonial extraction of natural resources is an ancient strategy; we could argue that such an industry is the engine at the dark heart of colonialism extended across centuries and still very present today. Recent theories have even taken such a connection as a geological index, positing that the Anthropocene Epoch started with the colonial encounter of the Europeans in the New World, generating "the largest human population replacement in the past 13,000 years, the first global

out of meteoric iron. When Cortez enquired of the Aztec chiefs whence they obtained their knives they simply pointed to the sky."

Mircea Eliade,
The Forge and the Crucible, 1956.

"We recently discovered there is actually a Buddhist sect that worships a large, black rectangular slab. The analogy of the Kaaba has also been mentioned. Though I certainly did not have it in mind at the time, the fact that the Black Stone sacred to Moslems is reputed to be a meteorite is more than quaint coincidence."

Arthur C. Clarke,
The Making of Kubrick's 2001,
1970.

"Stones that fall from the heavens have always been a subject of wonder and bewilderment. Beryl stones (from the Hebrew Beth-el, abode of God) were

2 Simon L. Lewis & Mark A. Maslin. "Defining the Anthropocene," *Nature*, 519, (12 March 2015): 174; see also, Kent G. Lightfoot, Lee M. Panich, Tsim D. Schneider, Sara L. Gonzalez, "European Colonialism and the Anthropocene: A View from the Pacific Coast of North America," *Anthropocene*, Volume 4, (December 2013):101–15.

3 Ibid. 177.

trade networks linking Europe, China, Africa and the Americas, and the resultant mixing of previously separate biotas, known as the Colombian Exchange."² It is still difficult to determine when to pound the "Golden Spike" into the stratified layers of rock to demarcate a new epoch, and so several speculative dates have been proposed: the earliest suggestion is Prometheus's fire and the latest marks the explosion of nuclear weapons. Others have suggested larger phenomena such as the invention of agriculture or the Industrial Revolution as the forces responsible for humanity's geological effect on the Earth. The connection between fire, industry and colonialism however is the most convincing argument, transcending regionalism and leaving a long-term trace in the fossil record: "Historically, the Industrial Revolution has often been considered as the most important event in relation to the inception of the Anthropocene. [...] However, in the view of many historians, industrialization and extensive fossil fuel use were only made possible by the annexing of the Americas."³ Before the introduction of the Anthropocene debate at the turn of the millennium, W.G. Sebald in *The Rings of Saturn* kaleidoscopically wove the history of fire and globalism:

Whatever was spared by the flames in prehistoric Europe was later felled for construction and shipbuilding, and to make the charcoal which the smelting of iron required in vast quantities. By the seventeenth century, only a few insignificant remnants of the erstwhile forests survived in the islands, most of them

revered in the Orient and even made their way into Rome as a god. part of the suite of the roman emperor Heliognbalus. The Ensisheim stone. which fell on 7 November 1492 in Alsace was considered by the Holy Roman Emperor's son Maximilian to be a good omen in his war against the French. Being heavenly signs, meteorites were not considered as scientific objects during the Renaissance, Classical age nor the Enlightenment. Despite the occurrence of numerous meteorite falls. it was only in the late 18th century that the European scientific community envisioned the nature and origin of fallen stones as a scientific question."

Matthieu Gounelle.
The meteorite fall at L'Aigle and the Biot report. 2006.

untended and decaying. The great fires were now lit on the other side of the ocean. It is not for nothing that Brazil owes its name to the French word for charcoal. [...] Combustion is the hidden principle behind every artefact we create. The making of a fish-hook, manufacture of a china cup, or production of a television programme, all depend on the same process of combustion. Like our bodies and like our desires, the machines we have devised are possessed of a heart which is slowly reduced to embers. From the earliest times, human civilization has been no more than a strange luminescence growing more intense by the hour, of which no one can say when it will begin to wane and when it will fade away. For the time being, our cities still shine through the night, and the fires still spread. In Italy, France and Spain, in Hungary, Poland and Lithuania, in Canada and California, summer fires consume whole forests, not to mention the great conflagration in the tropics that is never extinguished.⁴

While fire is a general theme, new technologies demand specific raw materials, including what are called Rare Earth Elements (REE). Such elements are required, as Sebald points out, to illuminate television screens along with a host of other advanced technologies. One REE is called promethium and it is used to create nuclear batteries and luminescent paints. “Rare” is a relative term here as the seventeen elements composing

“The Pennacook myths, which were the most consistent and picturesque, taught that the Winged Ones came from the Great Bear in the sky, and had mines in our earthly hills whence they took a kind of stone they could not get on any other world.”

H. P. Lovecraft,
The Whisperer in the Dark, 1931

“The concept that true history is natural history emancipates the objects of nature from the government of man. For the idea of singularity it is significant [...] that geological phenomena—taken in their widest sense to include specimens from the mineral kingdom—constitute landscape forms in which natural history finds aesthetic expression. [...] The final stage in the historicizing of nature sees the products of history naturalized. In 1789, the German savant Samuel

- 5 Frik Els, "Canada Wants 20% of Global Rare Earth Market by 2018," *Mining.com* (8 January 2014): <http://www.mining.com/canada-wants-20-of-global-rare-earth-market-by-2018-27834>. Accessed: April 15, 2015.
- 6 It is debated why China limited RRE exports. One argument proposes China was trying to regulate and control the massive ecological damage resulting from cheap REE production, while another argument states China was manipulating market prices and attempting to keep REE resources for domestic manufacturing—the export restrictions only effected raw REE and not products containing REE. Much of the facts in the paragraph come from Canadian government: *Rare Earth Elements - Special Mineral Feature, Minerals and Metals Sector, Natural Resources Canada*, (2011). PDF. Source: <http://www.nrcan.gc.ca/mining-materials/markets/canadian-minerals-yearbook/2011/11794>. Accessed: April 15, 2015.

this class are not so much "scarce" in the Earth's crust, but rather "extraordinary" in the sense that they were discovered later as it was difficult to isolate the pure element from ores and each other. Furthermore, we treat them as "unique" because they found uses almost exclusively in the contemporary high tech industry and thus did not have an industrialized smelting process for extraction until very recently. Today, REEs are an index of the global situation, articulating international trade, market trends, security policy, and geopolitical issues. While Canada might have a monopoly on the tailing ponds of the Tar Sands, it is China's 97% of the REE market, mostly in Mongolia, that dominated in 2011. However, with a projected 40–50% of the world's REE deposits, Canada hopes to secure 20% of the international market by 2018.⁵ Such numbers set a high target considering as of the writing of this text there are still zero active mines in the Arctic (Canada and Greenland). This is not to say however that Canada is not ambitiously pursuing extraction of such resources in the Arctic region—complimenting diamonds, petroleum, and other resource extraction. In 2011, Canada had 206 prospective projects—a backlash driven by China's tightening control of REE exports resulting in both an increase in market cost as well as fear of supply chain security for military production in Western countries.⁶ According to the Government of Canada the top two most advanced Rare Earth mining sites shifting from speculative prospecting to active mining are both imaginatively named after spiritual lineages—but neither after local indig-

Witte-basing his conclusions on the writings of Desmarests, Duluc and Faujas de Saint-Fond-annexed the pyramids of Egypt for nature, declaring that they were basalt eruptions; he also identified the ruins of Persepolis, Baalbek, Palmyra, as well as the Temple of Jupiter at Agrigento and the Palace of the Incas in Peru, as lithic outcroppings." Barbara M. Stafford. "Toward Romantic Landscape Perception: Illustrated Travels and the Rise of 'Singularity' as an Aesthetic Category," *Art Quarterly*, n.s.l. 1977.

"On the edge of this prehistoric Machine. [...] the landscape was no landscape, but "a particular kind of heliotypy" (Nabokov), a kind of self-destroying postcard world of failed immortality and oppressive grandeur [...] I am convinced that the future is lost somewhere in

7 The indigenous name for the area of Lake Thor is Nechalacho. I am unable to determine where or when the Thor name was implemented, however it is officially used at the cartographic, corporate, and government levels.

8 Mircea Eliade, *The Forge and Crucible: The Origins and Structure of Alchemy* (Chicago: University of Chicago, 1956), 28.

enous spiritual traditions. *Ashram* is in the northernmost region of Quebec and *Lake Thor* in the Northwest Territories.⁷ *Lake Thor* is the most advanced project outside of China for Heavy Rare Earth Elements and will extract europium and terbium for the phosphorescence in TVs, dysprosium for nuclear reactors and data storage, as well as the super magnetic neodymium for lasers and wind turbines.

Thor is one god among many forging a correlation between metallurgy and spirituality, according to historian of religion, Mircea Eliade, who conjectured that the origin of many religious rituals and worship was generated by meteorite impacts. Easily the most spectacular event one could witness in ancient times, meteorites were, by proxy, holy objects from the heavens. In a time before mining, archaeometallurgists estimate, such pure sources of iron alloy were extremely rare and valued more than gold, copper, and silver—the earliest worked metals since they were found on the surface of the Earth in pure elemental form and malleable at low temperatures. Gold, however, was used for decoration, and it was the iron from the gods reserved for sacred talismans and weapons. It has long been surmised that the *Al-Hajaru al-Aswad*, the “Black Stone” embedded in the eastern corner of the *Ka’aba* in Mecca, is a meteorite while, as Eliade wrote, “Bedouins of Sinai are convinced that the man who is successful in making a sword of meteoric iron becomes invulnerable in battle and assured of overcoming all his opponents.”⁸ The Cape York meteorite, one of the largest to have ever been discovered, supplied iron for the Inuit in Greenland before European contact. Chiseling flakes off the meteorite provided sharp metallic heads for spears to hunt and knives

the dumps of the non-historical past; it is in yesterday’s newspapers, in the jejune advertisements of science-fiction movies, in the false mirror of our rejected dreams. Time turns metaphors into things.”

Robert Smithson.

A Tour Of The Monuments Of Passaic, New Jersey. 1967.

“The anthropologist cannot always leave his own shadow out of the picture he draws.”

Ursula K. Le Guin.

The Word for World is Forest. 1972.

“Everywhere a hole moves, a surface is invented. When the peripheral upheaval of (hole) complex spreads from the crust to within, the despotic necrocratic regime of periphery-core, for which everything should be concluded and grounded by the gravity of the core, is deteriorated. The

- 9 Patricia A. M. Huntington, "Robert E. Peary And The Cape York Meteorites," *Polar Geography*, 26, No. 1 (2002): 53–65; A. Kracher, G. Kurat, and V. F. Buchwald, "Cape York: The Extraordinary Mineralogy of an Ordinary Iron Meteorite and its Implication for the Genesis of Ill AB Irons," *Geochemical Journal*, Vol. 11 (1977): 207–17.
- 10 Claiming to be the first man to reach the North Pole, over time Peary's claims became less and less believed.
- 11 Helen Sawyer Hogg, "Out of Old Books (Peary and the Cape York Meteorites – The Saviksue)," *Royal Astronomical Society of Canada Journal*, Vol. 57, No. 1 (Feb, 1963): 41–8.
- 12 For one of the more extreme versions by the Canadian government, see: Melanie McGrath, *The Long Exile: A Tale of Inuit Betrayal and Survival in the High Arctic*. London: Fourth Estate, 2006; and the documentary: Zacharias Kunuk, *Exile*. Isuma Productions, 2008.

to cook.⁹ At the turn of the twentieth century dubious polar adventurer and American Rear Admiral, Robert E. Peary, convinced the Inuit to show him the meteorite fragments and he spent several years logistically extracting the immense objects and shipping them to the American Natural History Museum in New York City for a bounty.¹⁰ In the official record of his discovery of the meteorite, Peary (as of yet to venture on his North Pole expedition) echoes the ancient mythology of the north by referring to—or quoting the indigenous, it is uncertain where the description originated—the meteorite as "Iron Mountain."¹¹ Today the Cape York meteorite is the largest *aerolith* on display in the world. Inversely occupying its place just around the peninsula from Cape York back in Greenland, the colonial outpost of the American Thule Air Force Base serves as a logistical hub and communications node for Arctic mobilization and surveillance.

Thule was established as a permanent settlement by Robert E. Peary and shortly thereafter given the Greek name *Ultima Thule*—meaning beyond the borders of the known world—by the missionary Knud Rasmussen. In the 1950s the local Inuit people of the region and in several other locations in the Arctic, were subject to government relocation—one of several strategies used by colonial occupying forces in the Arctic that either relocated Inuit people in order to annex strategic sites or forced them into exile to occupy contested territory.¹² It was during this time that Thule became a key station in the Distant Early Warning (DEW) Line. A logistical and technical *tour de force* of the American military industrial complex during the Cold War, the DEW Line was an electromag-

dismantling of the coherency between the periphery and the core is equal to the rise of the ultimate unground where the radical Outside is posited from surface to the core.

Military and political practitioners have long formulated as an archaeological law the asymmetry between ground's consistency and the consistency of poromechanical entities or porous earth: For every inconsistency on the surface, there is a subterranean consistency. [...] archaeology, with its ingrained understanding of Hidden Writing, will dominate the politics of future and will be the military science of twenty-first century."

Reza Negarestani.
Cyclonopedia: Complicity with Anonymous Materials. 2008.

13 For a thorough overview of the cultural discourse and political environment that early computer systems such as SAGE were producing, see: Paul Edwards. *The Closed World: Computers and the Political Discourse in Cold War America*. Cambridge: MIT Press, 1996 (especially Chapter 2). For a first-person history of the development of the technology, see: F. Robert Naka and William W. Ward, "Distant Early Warning Line Radars: The Quest for Automatic Signal Detection," *Lincoln Laboratory Journal*, Vol. 12, No. 2 (2000): 181–204.

netic curtain extended across the Western ice cap designed to alert mainland USA of incoming USSR bombers carrying nuclear warheads. The electronic infrastructure that connected these remote outposts—iconically remembered as white Buckminster geodesic domes—was the birth of cybernetics and early network design. With incredible resources backing the research and development as an emergency measure to protect against another Pearl Harbor, Lincoln Labs, MITRE, MIT, IBM, Western Electric, AT&T, and the Defense Department partnered to create the first semi-automatic responsive air defense system that was moreover the initial example of networked real-time processing in relation to stored memory.¹³ Called SAGE (Semi-Automatic Ground Environment), the processing power and artificial nervous system reached out all the way to the farthest reaches of the Arctic via the DEW Line—including to Thule. And in order to materially make the green radar screens glow and sonic alarms go ping, newly found uses for Rare Earth Elements necessitated extraction and refinement to roll out the components on the post-war assembly line. Sequestered in the bunker control rooms in New England and Cheyenne Mountain or isolated in the geodesics of the DEW line outposts, humans started to share their analyses and processing with the machine. Specifically designed for the outposts of the Arctic—and thus foreshadowing the future outer space missions—the infrastructure for a skeleton crew necessitated automated signal processing to support their human sentinels watching out for bogey signals travelling amongst the *aurora borealis* as ghost riders from the future.

"Information technology is always already strategy or war."
Friedrich Kittler.
Discourse Networks
1800/1900. 1985.

"Mr. Schmidt, the executive chairman of Google, and Mr. Cohen, a former adviser to Condoleezza Rice and Hillary Clinton who is now director of Google Ideas [...] met in occupied Baghdad in 2009, when the book [The New Digital Age] was conceived. Strolling among the ruins, the two became excited that consumer technology was transforming a society flattened by United States military occupation. They decided the tech industry could be a powerful agent of American foreign policy."

Julian Assange.
"The Banality of 'Don't Be Evil.'" *New York Times*. 2013.

14 "In Project Charles, at MIT, a committee of distinguished scientists spent the first six months of 1951 looking into the air defense problem and recommended establishing an air defense laboratory (the eventual Lincoln Laboratory). The East River study of summer 1951, under the Air Force and the National Security Resources Board, found civil defense measures not only dependent on adequate early warning (requiring a much improved radar network) but useless without highly effective air defense." Paul Edwards, *The Closed World*, 93. Arthur C Clarke's "Sentinel of Eternity" was initially published in the first and only issue of the magazine *Ten Story Fantasy* in 1951.

15 Stanley Kubrick quoted in *The Making of Kubrick's 2001*, ed. Jerome Agel (New York: Signet, 1970), 330; also, Arthur C. Clarke: "M-G-M doesn't know it yet, but they've footed the bill for the first \$10,500,000.00 religious film," in *ibid.*, 10.

While a think tank was determining in 1951 America's most urgent security threat required the continental early warning system of SAGE/DEW, the British physicist and science fiction author, Arthur C. Clarke was publishing his short story "Sentinel of Eternity" about a galactic early warning system positioned on the Moon to sense the emergence of intelligence on Earth.¹⁴ Eventually, the narrative was reworked with filmmaker Stanley Kubrick to create a contemporary rendition of the metallurgical mythology first established in the worship of meteorites. *2001: A Space Odyssey* (1968) was the first spiritual work for the Rare Earth Age, or as Kubrick told *Playboy*: "I will say that the God concept is at the heart of *2001* — but not any traditional, anthropomorphic image of God. I don't believe in any of Earth's monotheistic religions, but I do believe that one can construct an intriguing scientific definition of God."¹⁵ The main shift from the short story to the film lies in the transposition of a passive beacon on the Moon to an intervention on Earth. The magnetic anomaly of the Monolith/Meteorite lands on the Earth and establishes a techno cult enacted by the recently converted *homo faber*. Echoing in fictional narrative a fictional history, *2001* repeats the fantasies of early European explorers by positing an imaginary magnetic anomaly in the margins of their world. On Earth it was the dual Magnetic North Poles used for navigation by compass, on the Moon a magnetic Monolith sending a signal leading an odyssey toward Jupiter.

In stark summary, *2001* synthesized Schopenhauer's Will, Feuerbach's critique of anthropogenic deities, and the Nietzschean Superman—all within the strict invention of the Wagnerian darkened theatre—to propel us with a parabolic gravita-

- 16 For the purpose of this text, I am restricting my interpretation of *2001* to the singular cinematic collaboration between Clarke and Kubrick and not the entire fictional universe later expanded by Clarke with literary sequels that allow within the series complexities as well as inconsistencies.
- 17 Carl Freedman, "Kubrick's *2001* and the Possibility of a Science-Fiction Cinema," *Science-Fiction Studies*, Vol. 25 (1998): 300–18 (314); Stanelly Kubrick, *The Making of Kubrick's 2001*, ed. Jerome Agel, (New York: Signet, 1970), 331.
- 18 I acknowledge the climax of the film pictures the reborn Bowman as the Star Child floating in orbit around the Earth, yet the scale of the fetus problematizes the assumption that after a passage through technology one physically returns home to the material Earth. Regardless, returning as a spirit negates the need, and thus care, for a material Earth.
- 19 Nicolai Fedorov, "The Common Task," in *The Accelerationist Reader*, ed. Robin Mackay and Armen Avanessian, trans. E. Koutaissoff and M. Minto (Falmouth: Urbanomics, 2014), 86.

tional slingshot through Deleuze's "folding, unfolding, refolding" of spacetime and into the Baroque windowless Monad of David Bowman's last resting place framed by the draping curtains of the flying machine-cinema screen.¹⁶ As such *2001* is traditionally received as a utopian film that directs us through the *phylogenesis* of consciousness as benignly directed by what some critics have called an "Overmind" and what Kubrick himself has called "beings of pure energy and spirit."¹⁷ However, even within this neutered-optimistic trajectory toward the transubstantiation of the Star Child, the Earth is left behind. With all the mystery "out there" and zero gravity ballet paid for with dead bones, the embrace of the non-anthropomorphic results in leaving Spaceship Earth.¹⁸ Echoing the first cosmic theorist Nicolai Fedorov's desire to escape "the slow destruction of our home and graveyard,"¹⁹ Kubrick's humanity accelerated through Earth's resource extraction and escaped the gravitational field of the "terrestrial craft" in order to excavate a second Monolith on a new world. For all the film's brilliance as a work of art and cult status for a new generation experimenting with psychedelics and cybernetics, it is worth considering the critique of feminist science fiction writer Ursula K. Le Guin of such narratives:

If science fiction is the mythology of modern technology, then its myth is tragic. "Technology," or "modern science" (using the words as they are usually used, in an unexamined short hand standing for the "hard" sciences and high technology founded upon continuous economic growth), is a heroic undertaking, Herculean, Promethean, con-

20 Ursula K. Le Guin, "The Carrier Bag Theory of Fiction" (1986), in *Dancing at the Edge of the World* (New York: Grove Press, 1989), 169–70..

21 Walter Burkert. *Homo Necans: Interpretationen Altgriechischer Opferriten und Mythen*. Berlin: De Gruyter, 1972; English: *Ibid. Homo Necans: The Anthropology of Ancient Greek Sacrificial Ritual and Myth*. Trans. Peter Bing. Berkeley: University of California, 1983.

ceived as triumph, hence ultimately as tragedy. The fiction embodying this myth will be, and has been, triumphant (Man conquers earth, space, aliens, death, the future, etc.) and tragic (apocalypse, holocaust, then or now).

If, however, one avoids the linear, progressive, Time's-(killing)-arrow mode of the Techno-Heroic, and redefines technology and science as primarily cultural carrier bag rather than weapon of domination, one pleasant side effect is that science fiction can be seen as a far less rigid, narrow field, not necessarily Promethean or apocalyptic at all, and in fact less a mythological genre than a realistic one.

It is a strange realism, but it is a strange reality.²⁰

This is not to say that Kubrick lacked a critical voice; the murderous computer HAL in the film is a subtle letter transposition of IBM, possibly warning of the dangers of automated systems; *The Shining* (1980), using the horror genre, is a moral tale critiquing the colonial genocide of Native Americans. While it is easy to see the danger with the machine HAL due to its direct fatal actions, we start to question what is the difference between HAL and the machine of the Monolith. While most attention is given to the Monolith's responsibility of sparking proto-human consciousness, it is important to remember that this was done through the wielding of a weapon: the dawn of *homo necans*.²¹ In the most famous cinematic edit of all time, from ballistic bone to spaceship, Kubrick cuts out the dark side of space travel. Rockets were invented

22 Kubrick's immediately preceding film *Dr. Strangelove* (1964) looked at this exact threat—albeit with the outdated, yet much more theatrical, bombers delivering nukes. In 1961, the Ballistic Missile Early Warning System (BMEWS) replaced the DEW Line.

23 Karl Marx, "Fragment on Machines," in *The Accelerationist Reader*, 53. Originally from *Grundrisse der Kritik der Politischen Ökonomie* (1858).

24 Philip K. Dick, *Do Androids Dream of Electric Sheep?* (New York: Doubleday, 1968).

as a loophole in the Treaty of Versailles and first designed as Vengeance Missiles (V-2) by the Nazis under Wernher von Braun. At the time of Kubrick's film, Inter-Continental Ballistic Missiles (ICBMs) flying over the Canadian Arctic with nuclear payloads were the most serious global threat.²² We must ask what is behind the dream of the Star Child, or, as Gil Scott-Heron sang in 1970, why in *2001* is only "Whitey on the Moon"? Re-interpreting *2001* against the grain of a Promethean epic, and recognizing that today we are stuck more on the Earth than we were when the film *2001* was playing in the cinemas, we begin to see what is the possible end game when we smelt more metal for machines. As Marx warned, "Once adopted into the production process of capital, the means of labour passes through different metamorphoses, whose culmination is the machine, or rather, an automatic system of machinery ... so that the workers themselves are cast merely as its conscious linkages."²³ The question is not *Do Androids Dream of Electric Sheep?*²⁴, it is, "Do Rare Earth Elements Dream of Humans?" Considering that we are not part of the *Elysium* elite and do not have another planet to escape to—as if this one was as disposable as the planned obsolescence of our consumer technology powered by Rare Earth Elements—our understanding must shift from mining more Rare Earth to understanding how rare is our Earth.