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Outer Space Doesn't Exist: On the Theory and Practice of Studying Astroculture

“We have landed on smooth ice where there is no friction; so in a certain sense the conditions are ideal, but just because of that we also can't walk. We want to walk, so we need friction. Back to rough ground!”¹

Ludwig Wittgenstein

1) *Introduction*

A colleague who is working on a book that theorizes New Space recently told me that this endeavor was taking “every ounce of clever” that he had. I know the feeling, and this text, which is aimed at thinking through methodological issues and challenges involved in the study of astroculture, is only a modest contribution. The thesis that I expound, but which seems to have deep and implications for the study of astroculture, and which is influenced by the New Realism of philosopher Markus Gabriel, is that outer space doesn't exist. The obvious importance of this claim becomes clear when we consider the definition given to astroculture by the inventor of the field of study, Alexander Geppert. As he explains what astroculture scholars study is “the cultural significance and societal repercussions of outer space” or how human beings have “used their creative powers to render the infinite vastness of outer space conceivable.”² Denying the existence of outer space might then seem to amount to denying the possibility or the legitimacy of the study of astroculture as it has been carried out up to the present. But in my claim is hardly so radical. As I hope to make clear, recognizing that outer space doesn't exist both legitimates much of what astroculture scholars in their study of the human relationship to outer space have done, and it sheds light on the ongoing development of what I will call astrocriticism, namely a practice of cultural criticism which, in ways akin to eco-criticism, post-colonial criticism, feminist criticism and the like, attends critically to the relationships between cultures and the extraterrestrial realities. In short, getting clear about the fact that outer space doesn't exist helps us to understand more clearly the real object of astrocultural study.

That said, this paper does not only cover what it means to focus the study of astroculture on outer space it also aims to consider the limitations of outer space for astrocritical thinking about the social, economic and ecological implications of New Space, by which I have in mind the current process of economic expansionism in which areas beyond the Earth are progressively being drawn into metabolic processes animating the capitalist economy. By this I have in mind very concrete phenomena that seem to me to be happening beyond planet Earth—the proliferation of Starlink Satellites, the expansion of 5G networks, the construction of LunaNet on the moon, and near-term construction private space stations such as Blue Origin's Orbital Reef. As I will suggest, understanding astroculture with a focus on outer space is ideal for those interested in cultural history, but it is less ideal for those of us engaged in critical social theorizing about space, and this is in part due to what I will suggest is an ongoing historical paradigm change from an outer-space focused first space age towards an economic-space focused Space 2.0. That

¹ Ludwig Wittgenstein, *Philosophical Investigations*, G. E. M. Anscombe, P. M. S. Hacker, and Joachim Schulte, Chichester, Wiley-Blackwell, 2009, 107.

² Alexander Geppert, “European Astrofuturism, Cosmic Provincialism: Historicizing the Space Age,” Geppert, *Imagining Outer Space*, New York, Palgrave MacMillan, 2018, loc. 530.

said, this text is indeed primarily about outer space, and it is primarily a contribution to the theory and method of an outerspace-oriented study of astroculture. In other words, I only offer a cursory engagement with the more difficult problem of thinking about an astrocriticism without outer space, recognizing, for the instant, that doing so will require possessing a cleverness that right now exceeds me.

2) *Does Outer Space Exist?*

Outer space obviously exists—right?

It is out there beyond the Earth. We have been there, seen it, felt it, written about it, studied it. Claiming that it doesn't exist sounds like radical anti-realism or some form of cosmic nihilism. Yet I am not claiming that any of the things or places that we generally understand as being in outer space—LEO, the Moon, Mars, exoplanets, L5, and the rest—don't exist. I am likewise not claiming that outer space is illegitimate as a cultural phenomenon or claiming that the study of astroculture is flawed because or if it studies the human relationship to outer space. In fact, there are reasons why outer space is a *perfect* or *ideal* cultural studies or social scientific object—precisely *because* it doesn't exist. What I am claiming is that outer space does not exist in the way and in the place that most of us tend to think that it does exist—namely out there beyond the Earth.

So why (or really, how) doesn't outer space exist?

a) Outer Space is not a scientific concept

We may think that outer space is identical with the scientific object called the 'cosmos' by contemporary astrophysics, and this is sometimes confusedly the case in the philosophical pronouncements of astrophysicists. Yet as Eric Chaisson explains, contemporary cosmology is a theory derived from reflection upon the past of the universe, a product derived from the study of cosmic "deep time."³ It takes as its basic evidence the information that cosmologists are able to observe about the universe, and these observations are themselves limited by the physical qualities of the light and radiation that serve as evidence for cosmological theories. This is what differentiates scientific cosmologies from those of the philosophers, who, in Chaisson's words, wish "that light speed be infinite so as to reveal the whole Universe presently."⁴ Due to these limitations inherent in adherence to data, the contemporary scientific understanding of the expanding cosmos refers to an incomprehensibly large, but nevertheless also finite, thing. That this very large thing may be part of something yet larger or more absolute (Chaisson's "whole Universe") is not something that can be measured or ever in principle be made available to scientists. The whole Universe, or outer space is, in other words, a purely metaphysical concept, as speculative idea that exceeds any data-driven confirmation.

Outer space, then, stands rather closer to Giordano Bruno's pre-scientific conception of an infinite universe which stands beyond any possible sensual confirmation ("the senses cannot reach the conclusion we seek, because the infinite is not an object for the senses") than it does to

³ Eric Chaisson, *Epic of Evolution*, New York, Columbia University Press, 2005, p. 7.

⁴ Chaisson, 7.

contemporary empirical cosmology.⁵ Rather than a scientific concept, outer space is something akin to a physico-theological one. It is something akin to the infinite Cartesian *res extensa* which a dogmatic scientism might imagine as the ultimate theoretical ground for the scientific worldview. But if that is the case, it is also true that the relational distinction between inner and outer makes little sense in a sun-centered solar system, and it makes even less sense in a system in which there is no cosmic center. In terms of a non-geocentric cosmology, the Earth is quite simply in outer space. Perhaps it could make physical sense to talk about inner space as correlating with the area immediately around the sun, or perhaps as marking the boundary between our solar system and other galaxies, or perhaps between our cosmos and the utterly unknown cosmic outside that we haven't—and can't—measure. But these alternative ideas regarding inside and outside don't correlate with how we use the term outer space. Quite simply, outer space seems to be a cosmological remainder of what Kuhn called the “twin spheres” worldview of pre-modern Aristotelian and Ptolemaic cosmologies.⁶ Arguably, the distinction between inner and outer space echoes Aristotle's distinction between a constantly changing inner sphere and an eternal and harmonious outer sphere, such that the idea of getting to outer space, mastering it, knowing it, constitutes something like the imagined end to progress, the point at which we will have ceased embarking on an endless process of self-improvement and suddenly achieved the plateau of arrival in which all has been revealed. But whether outer space is a remainder of Aristotelianism or not is irrelevant here, since my larger point is only that outer space isn't a scientific concept, or rather if it is one, it rather more resembles aether than oxygen with respect to our contemporary understanding of the cosmos.

b) Outer Space and the Ontology of Sense

The primary reason why outer space does not exist, however, is not because it doesn't correspond to our current scientific paradigm, but rather because of the logical paradoxes and problems that follow from granting outer space understood as an all-encompassing container, the “infinite” in Bruno's sense or the “*res extensa*” in Descartes' existence. Translated into the language used by philosopher Markus Gabriel, outer space is a version of the world, and the world, as he has quite convincingly argued in a series of recent works, doesn't exist.

But of course, we can't just dismiss the existence of outer space like that, so let us consider more closely what Gabriel has in mind by existence, and why, based on this account of existence, outer space doesn't exist. Gabriel defines existence “to be the fact that some object or objects appear in a field of sense. For something to exist is for it to appear in a field.”⁷ In other words, things exist when they are found in determinate contexts, “fields of sense.” This insistence on the equivalence of existence and sense, according to Gabriel, is robustly realist insofar as “senses are objective modes of presentation associated with objects, no matter what kind of object is in question” and Gabriel even goes so far as to claim that “senses are properties of objects and not ways of looking at them,” and to allege that there are mind-independent fields of sense (which is to say that things exist which don't make sense to us as human beings).⁸ But unlike naturalistic

⁵ Giordano Bruno, *On the Infinite, the Universe and the Worlds: Five Cosmological Dialogues*, trans. Gosnell, New York, Huginn, Muninn & Co., 2014, p. 36-7.

⁶ Thomas Kuhn, *The Copernican Revolution*, Cambridge, Harvard University Press, 1957.

⁷ Markus Gabriel, *Fields of Sense*, Edinburgh, Edinburgh University Press, 2015 3178.

⁸ Gabriel, *Fields of Sense*, 404.

versions of realism, which tend to treat only material objects as really real in this way, Gabriel's account of existence is highly inclusive, attributing reality also to fictions and mental objects. Gabriel calls this neutral realism, neutral insofar as the term existence remains neutral with respect to the existence of things that we would habitually describe as fictions. In other words, the city of Nicosia in Kim Stanley Robinson's *Mars Trilogy* exists just as much as New York City, only they exist in different fields of sense, different contexts in which they make sense.⁹ Nicosia, for example, exists in Robinson's book but it does not exist on Mars. New York City exists both in my past and in Lethem's *Motherless Brooklyn*. Existing, as Gabriel clarifies, does not mean anything about whether something is real or fictive, but existing does mean that we can determine what is factual or false about that thing, and there are true and false things about everything—even about fictions and fantasies.

However, there is one thing that doesn't exist: and that is everything, the field of sense of all the fields of sense, what Gabriel calls the world and its equivalents.¹⁰ A world is an ultimate or absolute reality, an "unrestricted or overall totality, be it the totality of existence, the totality of what there is, the totality of objects, the whole of beings, or the totality of facts or states of affairs. The world is usually meant to designate the ultimate, all-encompassing unity or entity. It is supposed to be the place where everything takes place..."¹¹ Outer space fits this definition: it is a name for the place in which everything takes place, the unified totality. But the problem is if this "this unified totality differs from each and every single thing that is unified by it and accordingly becomes an additional field of sense, the field of all fields." But to make sense or exist, this field of sense needs to appear *in a field of sense*. The world thus appears either "in itself or in another field." If it appears in another field, then it precisely can't be the world, *the field in which all of the other fields appear*. Or else, it appears within itself. But this can't mean "that the world appears within the world alongside other fields," but this appearing would set in motion an endless regress of "Doppelgänger" worlds within worlds that never properly make sense.¹² As Gabriel sums up the point,

'The world', 'the meaning of it all', 'the domain of all domains', 'the One', 'absolutely everything', 'unrestricted totality', 'reality', 'Being', 'Beying', 'Being and Time', and so on, are all shorthand (overgeneralised) terms for failed attempts at cashing out Parmenides' misguided impression that we are somehow part of an all-encompassing sphere, the big thing, the universe, *una substantia*, *Deus sive natura*. The world does not even exist on such a small scale as that of an isolated Friday-evening dinner. Not even that everyday (or once a week) affair encompasses all the objects appearing within it and itself in such a way that there is no further focus. We cannot bring everything into focus at once, because there is no focus into which we could thus bring it.¹³

The problem, then, is ultimately one of focus, which I want to allege ultimately means that we can't actually understand what we ourselves think that we are saying when we claim to know that outer space exists. Let me show what I mean by this. For example, we cannot make true or false statements about outer space, at least in part because it contains everything and its contrary. For example, it is sometimes said that in going to the moon we went to outer space, though at the

⁹ Kim Stanley Robinson, *Mars Trilogy*, New York, Harper, 2013.

¹⁰ Markus Gabriel, *Warum es die Welt nicht gibt*, Berlin, Ullstein, 2013, 23.

¹¹ Gabriel, *Fields of Sense*, 53.

¹² Gabriel, 3788.

¹³ Gabriel, 3906.

same time, we didn't go to all outer space when we went to the moon (for example to Tao Ceti), and so in some sense we never went to outer space (nor could we). Likewise, people sometimes say that outer space is a harsh and lifeless environment but given that Earth (as well as what are now called "super-habitable exoplanets" also exist in outer space, this statement also yields no truth or falsity. Such paradoxes inevitably follow from trying to make statements about how outer space is, even including statements that seem bear on the definition of outer space as (say) infinite, since it is very hard to decide if what I mean by this is the claim that in my idea outer space is infinite, or if I think that in reality (understood as external reality) outer space is infinite, with the very inclination for one or the other option yielding decisive problems for my claims to know what it is that I am talking about when I talk about outer space.

That said, we can perfectly well allege that outer space exists just so long as the field of sense in which we situate it is not the one that we typically imagine when we refer to outer space. We can situate outer space in the social universe of human practices, and once we do this, suddenly outer space can—in a limited sense which deprives it of much of its normal sense—exist.

c) Outer Space Exists in Culture

This limited cultural existence explains why outer sense makes sense to us. We know how to use this idea, how to identify movies and books that talk about outer space, and how to identify outer space in these books, differentiating it from (say) Middle Earth. We know also that there are a whole range of social practices devoted to outer space—we call them astroculture. For if outer space does not exist—and will never exist—as most of us in our ordinary usages of the term suppose—namely as an all-encompassing container *out there*—outer space perfectly well exists, and indeed only exists, within human practices. Thus, to a certain extent, my provocative claim that outer space doesn't exist is, from the point of view of the epistemology of astroculture, nearly the opposite claim: namely that outer space exists fully for us, we can know everything about it, even about things that existed a long time ago in a distant galaxy far, far away, precisely because we are the ones that made it up. But this is not to claim there is nothing out there, nor is it to claim that we have made up Mars, the Moon, or Tau Ceti.

It is, however, to say that Mars is not in outer space and that there is not yet outer space on Mars. In fact, the only extraterrestrial place in which there is outer space right now is probably the ISS. The astronauts, after all, talk amongst themselves, and they talk to us, about outer space. But—of course—outer space mostly exists on Earth. It exists in books, in YA SF and in serious non-fiction. Outer space exists in my kid's Lego constructions and in the Halloween costumes of countless aspiring astronauts. It exists on the TV and in the movies. It is talked about by politicians and businessmen, by college professors and geek culture enthusiasts. Among all these astrocultures there are surely extremely varied versions of outer space. Probably every country and every culture and sub-culture has its own space. Though speaking in broad generalizations we could probably say that outer space exists in astroculture as something akin to what Damian Broderick has called an SF megatext, a "datable and limited body of "mutually layered texts"—a "web of interpenetrating semantic and tropic givens or vectors" that is itself constituted out of

multiple individual webs of sense.¹⁴ Restated in somewhat more pedestrian terms, the diverse and various manifestations of outer space, from Geek culture gatherings in which people speak Klingon to serious international colloquiums among astrophysicists, all contribute to and are informed by each other's 'making of space.' This made outer space then functions in culture and language like a kind of implicit rule which informs representational practices bearing on the creation of space-related objects and on the interpretation and integration of information coming in from research carried out on extraterrestrial objects. It is thanks to the outer space in our cultured consciousnesses that we know that *Star Trek*, *Dune*, *Star Wars*, *The Challenge*, and the footage of Armstrong on the Moon all are set in outer space, despite the fact that all of these objects differ wildly with respect to their representations of, and realism towards, the extra-terrestrial understood as an objectively observable field of sense.

According to this contextualization of outer space, when we study astroculture we study the historical process by which human beings invent outer space, sometimes by making up pure fictions, other times by integrating facts derived from the observation and exploration of extraterrestrial information into their fictional construction. Indeed, framing the human culture of outer space in this manner makes astroculture into something that has nothing immediately to do with the stars, and everything to do with a human longing to know and understand the whole, which in turn yields an ongoing process whereby the culture constructs an artificial whole.

3) *The Meanings of Outer Space*

Such a vision of the object of astrocultural investigations, outer space, as a purely human construction perfectly resonates with what we expect of cultural studies approaches. Clifford Geertz, for example, defined culture precisely as a human construction, as "webs of significance that he [humankind] has spun" explaining that the task of cultural studies was to analyze and interpret the meaning of these webs.¹⁵ Outer space then, as it exists, is not out there, but exists as a tangled web of culturally generated significations within our collective practices. What then is my interpretation of the significance of outer space, this object studied by astroculture? If the above arguments are right, the meaning obviously cannot have much to do with the stars: it has only to do with the human relation to the human production a culture's vision of cosmic reality. This might make us tempted to suppose that outer space is an ideal object for the study of human being, since the object of astroculture, as opposed to say, the state, or the art world, or even science, other autogenerated human institutions, does not really exist for human beings, in the sense that human beings—because they imagine space as being out there—do not understand space explicitly as imposing auto-generated rules upon their behavior, with the real, and primary normative for the historical evolution of outer space being the human imagination itself.

Following Heidegger, we might be tempted to say that what astroculture reveals is a deep truth about human being. For example, drawing on his *Die Grundbegriffe der Metaphysik*, which opens with a reflection on our ongoing concern with metaphysical questions-- "What is world,

¹⁴ Damien Broderick, 'Reading SF as a Mega-Text', *New York Review of Science Fiction* 47, July 1992, 1-11, 8.

¹⁵ Clifford Geertz, *The Interpretation of Cultures*, New York, Basic, 2017, p. 11.

finitude, solitude?” we can say that astroculture studies the “*Grundstimmung des Daseins*,” the foundational attunement of the human, the being that is there, towards being itself, with being understood, above all, as *human being*, a being that exists only in correlation with the human, and which is always, and only generated by humanity. This is what I take Heidegger to mean when he translates all past metaphysical about the nature of the world—previously understood as an extended real thing that had not been auto-generated by the human, into a single thing, and a single question: “What is man?”¹⁶ Yet as tempting as this high interpretation of attributing high existential significance to outer space and its study might be—it promises to allow us to think of the big history of everything in human terms—I want to highlight one of its risks. Heidegger’s idea that the question of the existence of the world amounts to the question of the existence of the human or the *Sein of Dasein* is subject to all of the same criticisms that we have made of the realist metaphysics underlying the *res extensa* interpretation of outer space. The human becomes the total container or absolute field of sense in which all that makes sense is situated. Yet this absolutization has perverse effects with respect to the reality and the existence of things that are not human. It implies claims such as the idea, criticized by Quentin Meillassoux, “that the physical universe could not really exist before the existence of the human being,” or, rephrased in terms of the extra-terrestrial, the idea that exo-planets didn’t exist until we discovered them, or that the Moon doesn’t exist independently of how we imagine it in our culture.¹⁷ This would yield, we might say, again following Meillassoux, a return or a revenge of Ptolemy, a denial of our ability to think realistically about things that we have not imagined and created out of our discourse, “la dévoilement paradoxale de la capacité de la pensée à pender ce qu’il peut y avoir, qu’il y ait pensée ou non.”¹⁸ To ward off this loss of realism—the loss of the idea that there things out there not in our heads, which also amounts to an attack on the epistemic legitimacy of science—it seems critical for any attempt to develop an astro-criticism oriented towards the protection of places in space—places that are mostly only known via the mediation of instruments and scientific theories and which have little direct relationship to the immediate human phenomenological experience that is the privileged way of being in the world for the being that is Dasein, we must rigorously try to keep in mind the fact that while outer space is a human creation, the extra-terrestrial is not, such that the meaning of the human as reflected in the mirror of outer space does not affirm the fact that all reality is created by the human, but only the more banal fact that human beings, both when talking about the world outside them, and when talking about themselves, are prone to exaggerations which are sought after in the name of producing apparently epistemically certain, but (in fact) ultimately nonsensical foundations for their discourses.

Yet it is surprisingly difficult to do this when one is oneself talking about outer space: simply put, when talking about outer space ourselves we constantly find ourselves veering off into fantasies. Stanley Cavell, writing of the experience of coming to the point when “reasons come to an end,” the point at which we must accept that there is no ultimate absolute ground for why we use the words the way we do, evokes a kind of crisis that comes when we confront our “culture’s criteria,” our common way of using words, and find that we stand outside of it, we know that our culture’s way of talking is not right, but we don’t exactly know another way

¹⁶ Martin Heidegger, *Die Grundbegriffe der Metaphysik: Welt-Endlichkeit-Einsamkeit*, Frankfurt a.M., Klosterman, 2010, 10-11.

¹⁷ Quentin Meillassoux, *Après la finitude*, Paris, Seuil, 2006, 33.

¹⁸ Meillassoux, 160.

around.¹⁹ What I take him to mean, and why this remark seems relevant there, is that even if we can know and accept that outer space does not exist out there in the world, when we use the word it feels wrong to say that it doesn't, since denying the existence of outer space feels akin to denying the reality of what (rightly) does exist—namely extraterrestrial things like the Moon, the planets, and the rest.

4) *Confounding Realities: Or, the Cosmic Speculations of Others*

I want to suggest that there is no magic way of avoiding this temptation other than by changing our culture and our language, for example by banishing outer space from our astro-critical vocabulary. But there is a great deal of insight in this fact, as it happens to be true that when we as critics renounce making statements about outer space, we can nevertheless appreciate how, by assuming the point of view of what counseled by Hans Blumenberg, one in which the practice of philosophical anthropology amounts to the study of the “Die Beschreibung des Menschen,” which is to say less an effort aimed at describing and attributing a fixed meaning to the human—as does Heidegger—but rather remaining on the sidelines and observing and describing other humans engaged in this endeavor in the particular mirror that is outer space or the human discourse regarding his place within what he or she imagines to be the cosmos.²⁰ Engaging briefly in this practice, let me note that people go wrong when talking about outer space in two primary ways. Some uncritically treat outer space as co-extensive with the extra-terrestrial and thus believe this knowledge permits them to make true statements regarding what is beyond the Earth and experience. Others fall into a Heidegger-like totalization of the being of the human and treat outer space as if it were the only reality, effectively forgetting the existence of the extra-terrestrial. The first of these errors is more frequent among those who speak about outer space from the perspective of the natural sciences, while the latter is predominant among those who pass judgment upon the significance of outer space from the viewpoint of the human sciences. We call the first posture analogical delirium, and the second cosmic nihilism.

a) Analogical Delirium

Thinkers suffering from analogical delirium believe that they can extend, via analogy, what they think to be true about outer space into the extra-terrestrial. Steven Dick, for example, articulates this as a kind of methodological principle in his recent *Astrobiology, Discovery, and Social Impact*, claiming that “analogies can serve as solid guidelines to cosmic encounters with alien life.”²¹ Yet just how this belief in the power of analogies leads to delirium, by which I mean a confusion between what exists and what doesn't, between science and science fiction, becomes clear when we look at attempts to apply this principle in practice. Take, for example, Arik Kershenbaum's recent book, *The Zoologist's Guide to the Galaxy*. Kershenbaum's argument is that based on our knowledge of life on Earth we can know a great deal about what we will encounter when (or if) we discover aliens in outer space. As Kershenbaum explains in a typical passage: we can feel legitimate in our assumption that even if “alien astronomers” are “different from us in so many ways” they “would understand that the laws of physics constrain their

¹⁹ Stanley Cavell, *The Claim of Reason*, New York, Oxford University Press, 1999, p. 125.

²⁰ Hans Blumenberg, *Die Beschreibung des Menschen*, Frankfurt am Main, Suhrkamp, 2006.

²¹ Steven Dick, *Astrobiology, Discovery, and Societal Impact*, New York, Cambridge University Press, 2018, p.66.

abilities in just the same way as ours, and those constraints are true on any planet.”²² To be sure, there is something legitimate in the claim that their science, if it were science—meaning a description of sets of physical constraints and how they function—would thereby be like our science in some way. But aside from this broad generalization—Kershenbaum’s conclusion that this tells us what alien science would be like has no clear and determinate content. It doesn’t tell us what they would know, it does not tell us how they would know it. When Hobbes wrote that men are like wolves to men, he did not mean that they spent their time fighting over carcasses, sniffing each other’s scents, or howling at the moon. Bringing this back to Kershenbaum and to those suffering from analogical delirium, knowing that aliens will have science is like knowing that men are like wolves, but not knowing which of the possible aspects of the analogy actually have relevance. In other words, believing that we know things about the extra-terrestrial because it must somehow be like the outer space that we imagine is a recipe for thinking that we know more than we actually do, and if used uncritically may well lead us to know less than we would otherwise. As Kant put it (using a memorable analogy himself) when human reasoners believe that they can extend by analogy their knowledge out into space, they are like the “light dove cleaving in free flight the thin air, whose resistance it feels, and who imagines that her movements would be far more free and rapid in airless space.”²³ In other words, rather than soaring higher, analogical delirium can prompt us to lose all control.

b) Cosmic Nihilism

Cosmic nihilism, the forgetting or denial of the existence of the extra-terrestrial, is common among thinkers in the humanities in the post-Apollo moment. The arrival on the Moon was interpreted as revealing the truth about outer space, namely that it was ultimately meaningless with respect to human life and history. As Peter Sloterdijk, who places this kind of cosmic nihilism with its denial of the existence, reality, and value of the extraterrestrial at the heart of his theory of the globalization of human existence—puts it, after Apollo, we learned that “the planet Terra” is “the one and only real sphere.” What he means by this that following the visit to the moon, outer space as a place of culturally invested promise “collapsed into emptiness” as people realized that there was nothing out there worth seeing or knowing.²⁴ Yet the problem with this line of thought, which rightly traces a devalorization of outer space within the cultural imaginary, is that it ignores the fact that because the moon and the rest still exist, actually and factually standing in a closer relationship to humankind in the post-Apollo moment, their significance for humankind and human culture could only grow as a result of concrete interactions even after the collapse of the fantasy of a human future in outer space. Because of this, Sloterdijk’s conclusion about the emptying of outer space is fraudulent and misleading. The simple fact of the matter is that human involvement with the extraterrestrial has never ceased expanding even if human space exploration—the kind of engagement with the extraterrestrial most consonant with outer space—did come (for a while) to a virtual end.

²² Arik Kershenbaum, *The Zoologist's Guide to the Galaxy*, New York, Penguin, 2020, p. 67-68.

²³ Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer, New York, Cambridge University Press, 1999, A5.

²⁴ Peter Sloterdijk, *Im Weltinnenraum des Kapitals*, Frankfurt a.M., Suhrkamp, 2005, 22.

5) *Astro-criticism and the Problem of Cosmic Nihilism*

In treating outer space as if it were actually the extraterrestrial, it is easy to feel as if Space 2.0 is quite simply a return of a confusion, namely the idea that somehow outer space—which is a fantasy—can somehow be made real. There is undoubtedly part of this that is true, but it also underestimates an ongoing paradigm shift within the human relationship to the extraterrestrial.

New space emerges precisely when the collapse of the old paradigm of outer space occurs, it happens when concrete relationships between human beings and actual existing extraterrestrial objects begin to become a determinate factor in the culture of space, replacing the previous cultural paradigm in which the actual input and feedbacks from extraterrestrial objects were minimal, and the primary drivers of outer space were human visions of the deep future. The problem with cosmic nihilism—and I take this to be a general error of many social science theories of the planetary or of the global that have proliferated in the post-Apollo moment—is that they mis-represent not only the factual reality of the extra-terrestrial and its relationship to humankind, but also prompt us to mis-recognize the Earth and human beings themselves. For example, as both David Grinspoon and Adam Frank have shown, our current scientific picture of our own planet and its changing climate could not have been elaborated without significant advances in our ability to study and analyze the historical changes in the climates of other planets in our solar system.²⁵ Furthermore, an enormous percentage of the data that we have about our own climate and our changing ecosystems comes from satellites that may well be pointed towards the Earth, but which are situated in LEO, which is to say, within a zone that we would have habitually called *outer space*. Assuming, as I do, that the cultural tone of our epoch has been most marked by the discovery of the Anthropocene, the awareness that we are changing our planet for the worse through our actions, then the entanglement of the planet, the human, and the extraterrestrial is even more significant. Simply put, if the Anthropocene is characterized in cultural terms by the ongoing development of new forms of “planetary” consciousness, new cultural structures of feeling of guilt, judgment, and responsibility with respect to our environmental impacts, then our supposedly planetary or global age is anything but that in reality: it is a post-planetary age in which data from space is inseparable from the understanding of the Earth and the self-understanding of earthlings, who would not be what they are if some extraterrestrial are not both real and meaningful, even if Mars and Venus have never, and perhaps will never, form part of the immediate lived experience of any human subjects.

Yet cosmic nihilism and the belief that an intrinsically human or political essence that underlies and generates all reality dies hard, and even environmentally aware sociologists of science such as Bruno Latour seem to be blinded by it. For Latour, the only answer to our climate crisis is a “return to Earth,” by which he seems to mean that we must, via politics, re-construct a reality that annuls outer space and situates the human future at the level of a closed loop with no outside.²⁶ Yet if the outside gives hope to those who wish to expand into space, the outside also allows for observation and monitoring, also allows for the development of comparative planetological research such as the studies of Mars and Venus that gave birth to the concept of

²⁵ David Grinspoon, *Earth in Human Hands: Shaping Our Planet's Future*, New York, Grand Central, 2016. Adam Frank, *Light of the Stars*, New York, Norton, 2018.

²⁶ Bruno Latour, *Où atterrir ? Comment s'orienter en politique*, Paris, La découverte, 2020.

Gaia which features so centrally in Latour's own thought, and so allows us to study and understand our situation. Put otherwise, Latour's urging to return to Earth, which is bound up in a desire to once again "experience things from close up" which he seems to feel will allow us to "resist this collective loss of orientation" that is characteristic of our present age actually amounts to nothing more than a fantastic wish that by returning to Earth we will somehow once again be able to make sense of the notion of the world by shrinking it.²⁷ But a shrunken Earth would not only not be the world, it would not even be the planet that we know now that we live on thanks to our excursions into space. Rather than looking around and striving to understand better what is going on, cosmic nihilists like Latour ultimately suggest that all we need to do to fix our problems—our "world alienation"—to use a phrase from Hannah Arendt is to give up any belief in realism, any ability to observe the Earth from the outside, and simply return to what for them has always been "the very quintessence of the human condition," the state of being Earthly, a state of understanding Earth as world, and the world as whole and intrinsically and absolutely limited to terrestrial forms of human dwelling.²⁸ But in doing this, we can collapse back into cultural fantasy relative to our ability to situate reality in thought, dreaming of restricting relevant reality to that which we can immediately and phenomenologically experience.

But in so doing we essentially embrace a critical viewpoint that runs contrary to accepting the importance and relevance of the extraterrestrial places that are being threatened by ongoing projects to build a space economy.

6) *Astrocriticism without Outer Space*

I want to conclude with a brief discussion of an alternate conception of astrocriticism. This approach would be realist—it would be focused on the relationship between existing objects as opposed to ideal non-existing objects. It would be fallibilist, eschewing as it does any method-based attempt to epistemically ground itself in some posited absolute being. That is another way of saying that any realist approach to astrocriticism must accept that its objects are not only not accessible a priori to the scholar, but that they may never even be objects of possible experience, in the sense that no humans may ever go to the asteroids that might be a matter of concern in our resistance against space mining. In this way, a realist approach to astrocriticism must foreground the ways in which our own bodies serve as epistemic limiters with respect to the amount that we can know and understand about our real relationship with extraterrestrial places and objects. But I do want to suggest that embracing a realist turn in the study of astroculture may better permit us to analyze and respond to the discourses and projects of new space expansionists such as Jeff Bezos and Elon Musk.

Suffice to say, the typical attacks against Bezos and Musk-- "there is no such thing as planet B"—essentially amount to reproaching them with the fact that outer space doesn't exist. Yet it seems true that outer space has not, to a certain degree, existed since Apollo, or since whenever we want to date the end of the first space age. To the contrary, one of the characteristics of the new space discourse is that it is deeply rooted in a commitment to deepening human relationships (and mostly economic relationships) to the extraterrestrial. Elon Musk, for example,

²⁷ LATOUR, Bruno. *Où suis-je ?* (French Edition) (p. 26). La Découverte. Kindle Edition.

²⁸ Arendt, Hannah. *The Human Condition* (p. 275). University of Chicago Press. Kindle Edition.

does not talk about colonizing outer space but about colonizing Mars, and his primary space investment activity is not concerned with people in “space,” but merely with making money installing hardware to provide data services from LEO. Even the current wave of more idealistic thinking no longer talks about conquering space but rather about becoming “interplanetary” or “multi-planetary,” or even, in the case of Bezos, involves abandoning “planetary chauvinism” altogether.²⁹ Behind these slight terminological distinctions lies a new paradigm of thinking about the human relationship to what lies beyond the planet. New space, unlike older forms of astrofuturism, is not primarily a utopian project. It is not about making outer space real. Few of the actors involved think that a Mars colony will be a utopia, they think only that such a colony may be realizable. They also think that they can earn money while building this colony. In this sense, claiming that there is no planet B is beside the point, and their proclamations that space expansionism can save us from existential risks essentially amount to marketing. One question animating new space is not whether space can be a utopia, but always whether our real relation to things extraterrestrial can be developed to the point that it begins to be concrete enough to sustainably generate profits. Interrogating the meaning and impact of this proposition may be one of the frameworks for thinking about astrocriticism without outer space. After all, what does a sustainable, economically self-funding space expansionism mean? How will the Mars colony really be like if its growth is framed by industrial interests as opposed to utopian dreams? Or, to take a more pedestrian example, what really is the Starlink satellite constellation, and what does it mean for near space? What does the expansion of the space economy in LEO mean for culture—whether we understand cultural actors to dwell on Earth or in space?

Questions like these are more concrete than asking what outer space is, but it is in some ways they are profoundly difficult to answer, at least in part because we lack historical context. Insofar as these things really exist, it seems that it is only via repeated interactions between human beings and what is extraterrestrial that we can really understand them and what they mean, what they are in themselves as well as what they are for us and our culture. Yet such relationships take time and involve, for want of a better word, history. This history is quite different in its structure from the history of outer space, for in its non-existence outer space has no history for itself, or rather its historicity is only to be attributed to the historicity of the human culture with respect to its own fantastic productions. Meanwhile, an extra-terrestrial object’s history, as well as the cultural history of that relationship to that object, is more complex and indeed dialectical, and tracing out this complexity is only rendered more difficult by the fact that extraterrestrial objects exist far from human beings, in places that we generally can’t go with our human bodies nor perceive with our unaided human senses. These difficulties mean that a purely humanistic study of extraterrestrial objects is difficult, it requires collaboration between scientists, technicians, and humanists. It also means that really understanding the objects of astro-criticism will depend in part on what Hegel called the “cleverness of reason,” namely whether our collective action with respect to something that even now escapes all of us as individuals might, in the fullness of time, reveal us to have been right—to have had our fingers on the pulsing heartbeat of future reality—all along.³⁰ Or not.

I would suggest that collaboratives of this sort ought to consider the solar systemic sustainability of the current wave of extraterrestrial expansionism. A critical reading of Bezos’ plans for a new

²⁹ Bezos, *Invent and Wander*, New York, Public Affairs, 2021, 246.

³⁰ Hegel, *Vorlesungen über die Philosophie der Geschichte* Reclam Verlag, 1924, 14.

Orbital Reef space business park would not denounce it as utopian, but would rather explore, in as concrete terms as possible, its ecological, social, and economic impacts. It would consider whether ongoing economic projects in space really—and sustainably—provide new and significant resources, whether they effectively help to mitigate dangerous human impacts on critical zones within the broader biosphere. We should consider whether this sort of development really has the promise of making anyone’s life better, or whether the access to worldwide cheap internet that is likely to be one of the most immediate effects of increasing human development in LEO will actually contribute to greater social alienation, an undesirable virtualization of everyday life, and an ever greater expansion of what Zuboff has called the “surveillance society,” with this new version of corporate surveillance increasingly including visual satellite data alongside network location data.³¹ We should likewise consider whether the development of the new space economy, which no doubt will stimulate economic growth by providing investment opportunities beyond the limits—and the limited resources—of the planet—might actually only aggravate income inequalities at all levels, deepening the gap not only between individuals who can or cannot afford investing in the new space economy, but also gaps between have and have not countries that have the technological know-how and money to invest in the development of extraterrestrial economic development.

I suggest that we should think about these things, but I also have very little to say about any of these questions—there is just too much that I, and probably everyone, doesn’t know. What I do think, however, is that it is important to think about these issues as a scholar of astroculture, and that to do so we need to focus less on the human relationship to outer space, and more on the myriad discrete and developing human relationships to objects and places beyond the Earth.

³¹ Shoshana Zuboff, *The Age of Surveillance Capitalism*, New York, Public Affairs, 2019.