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The Pastoral in the Anthropocene



## On Astropastoral in the Anthropocene

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# On Astropastoral in the Anthropocene

by Brad Tabas



## Abstract

The Anthropocene is an era that owes much of its self-understanding to data obtained from space. It is also a period in which fantasies of escaping from Earth to space are proliferating. This article examines one of these fantasies—the astropastoral dream that going to space can somehow return us to an idealized rural state—an ideology that we argue is contributing to keeping our society unsustainable by offering false hope for a post-planetary and post-ecological future. However, as the article also points out, there are versions of astropastoral which integrate but also modify practices drawn from nature writing to resist extraterrestrial expansionism and its violence. Astropastoral is thus presented as both an ideological tool for extraterrestrial expansionists and as a means of cultivating extra-terrestrial environmental awareness in the Anthropocene.

Keywords: Anthropocene, Astropastoral, pastoral, outer space, ecocriticism



## About the Author

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# On Astropastoral in the Anthropocene

*Brad Tabas*

## On Dreams of Green Planets in an Age of Ecological Crisis

The Anthropocene is the geological epoch in which datable lithic traces show the impact of human action on planet Earth.<sup>1</sup> Yet the Anthropocene is also a period characterized by anthropogenic changes to the functioning of the Earth System, and the Anthropocene hypothesis was first articulated by scholars working within the discipline of Earth System Science (ESS)—a paradigm that was first developed by NASA scholars in the 1960s and 1970s (Thomas, Zalasiewicz, and Williams 2020, ix). Using the best tools available—including advanced remote sensing technologies located in space, complex computer models, and robotic missions to other planets—these scientists established data-based comparisons between the current and historical climates of other planets and that of the Earth. Moreover, in so doing, they came to better understand the Earth system, ultimately discovering that it was rapidly changing due to anthropogenic factors. Even today, as astrobiologist Adam Frank notes, the ongoing study of both the Earth and alien planets continues to enlarge “our understanding of climate and climate change” (2018, 13).

This entanglement of the discovery of the Anthropocene with ESS means, to a certain degree, that when we talk about Earth System change, we also and always have, in the words of historian Dipesh Chakrabarty, “other planets in view” (2021, 75). The Anthropocene, then, is a post-planetary phenomenon in the sense that our awareness of our planet and its plight are (at least in part) epistemic products of the science of the space age and its inauguration of an era in which human beings and technologies—satellites, probes, rovers—have continually been present out beyond the surface of the Earth. As such, it is little surprise that in the cultural context characteristic of the Anthropocene, which is characterized by a growing and sometimes hysterical concern over the future habitability of planet Earth, there is likewise a rising wave of interest and investment in outer space, with a particular emphasis on finding ways to use the resources of the solar system to save Earthlings from their self-incurred plight.

The idea that space will somehow save the Earthlings from the Anthropocene is ever-present in the discourses of what Rod Pyle has called Space 2.0: the emergence of a private, for-profit space economy that primarily aims at extending economic growth out into the universe, but whose advocates tend to justify on the grounds that economically driven space expansion will have the collateral benefit of contributing to the long-term survival of humankind by stimulating the “colonization” of the final frontier (2019). Billionaire Mars colonization advocate and Space X founder Elon Musk, for example, has argued that we must become a “multiplanetary” species or risk eventual extinction (2017). Thinkers at the Santa Fe Institute argue that we need to work towards an “interplanetary” future in which humankind live not on planets but on fully artificial space colonies such as the ones designed and popularized by Princeton physicist Gerard O’Neill (Krakauer and McShae 2019). Behind all these discourses, stands the subtext that the worsening conditions on Earth that we describe as the Anthropocene justify the preparation of plans for life elsewhere in the universe. Confronted with this astrofuturist escapism, “There is no Planet B” has emerged as a motto of the environmental movement.

One thing that handicaps movements to leave the Earth behind is the fact that the ways in which we imagine good places—which often correlate with our pastoral imaginaries—in no way resonate with the realities that are to be found now in outer space. Astronaut Michael Collins, for example, insisted on the opposition between the “tortured surface” he saw on the Moon and the “infinite variety” of a “delightful planet Earth” with its pastoral landscapes of “misty waterfalls, pine forests, rose gardens, blues and greens and reds and whites” (2019, 469). Mars, arguably the destination most favored by the current wave of astrofuturists, promises to be no more pastoral than the moon. The red planet is, to quote planetologist Sarah Johnson, “cold, hard, and desolate,” harsher than “anything that scientists had imagined, beyond even the imaginations of the great science-fiction writers” (19). Despite all of this, in this age of unintended and undesired anthropogenic Earth system change, space advocates are now ever more convinced that it is possible to change these alien planetary systems just as we have already altered the Earth system, only in the inverse direction: towards the better. After all, if we have transformed the Earth’s system to the extent that we now live on a new planet that Bill McKibben calls “Eaarth,” a tough, new, and anti-pastoral planet or “inhospitable place,” “with melting poles and dying forests and a heaving, corrosive sea, raked by winds, strafed by storms, scorched by heat” (2010, 1), then perhaps we could change—or terraform, to use the correct technical term—Mars from a hell hole into a green paradise using insights gleaned from our already demonstrated capability to effectuate planetary system change.

The neologism astropastoral, which is the subject of this paper, relates to this idea that, in the future, what is now a barren corner of space might become a garden world. It

refers to the astropastoralist ideology, which argues that we can and should terraform alien places into garden worlds. Astropastoralism also signifies a wide range of discursive artefacts that apply conventions drawn from the long tradition of pastoral writing (including nature writing) to the description of places in outer space. Astropastorals describe places in outer space in ways that resonate with the long history of the pastoral. Astropastoral futures are nostalgic, paradoxically involving a technology-enabled return to an idealized rural past that, in the Anthropocene, seems increasingly unthinkable on Earth—and increasingly desirable. In astropastoral, forms of life expressive of a harmonious articulation of nature and culture are rediscovered or re-created out there among the stars.

Astropastoral is a new term, but it is not a new phenomenon. Astropastoral has already been studied under other guises—for example, Chris Pak’s “American Pastoral and the Conquest of Space” (2016, 56–98) is a discussion of the role of astropastoral in Golden Age Science Fiction, even if Pak himself does not use this term. Astropastoral pervades the entire history of science fiction; Robert A. Heinlein’s *Farmer in the Sky* (1950), Arthur C. Clarke’s *The City and the Stars* (1956), Kim Stanley Robinson’s *Green Mars* (1993) and Paul McCauley’s *Gardens of the Sun* (2009) all contain elements of astropastoral in their titles. It is also present in the long history of astronomy and astroculture (Elysium, Hellas, and Arcadia are all names attributed to specific places on Mars), as well as in various political and commercial visions selling the dream of an extra-planetary future (the idea of “settling the final frontier” echoes the language of the Jeffersonian Arcadianism). Yet astropastoral is particularly prevalent—and problematic—in the Anthropocene.

The prevalence is to be attributed to the widespread sense that the fragility of the Earth System puts our future on this planet at risk, while the astropastoral becomes problematic in this context insofar as it can foster environmental irresponsibility by prompting us to believe that we will be able to rebuild Earthly paradises elsewhere, thereby encouraging us to care less for the Earth.<sup>2</sup> Yet astropastoral can also play a role in raising ecological awareness in our post-planetary age. As so many environmental critics have argued, versions of the pastoral can play a key role in—to quote Lawrence Buell—cultivating “environmental literacy” by attuning readers to “reality” through descriptive cartographies of the “object world” (1995, 107). This attunement happens because astropastoral prompts us to attend to both the ecosystems that we already experience on Earth as well as those that we know of thanks to our remote sensors. At a textual or rhetorical level, the difference between these two tendencies in astropastoral, which below we will describe as the *imperial astropastoral* and the *ecological astropastoral*, largely comes down to discursive complexity. As Ken Hiltner has pointed out, ecological

versions of the pastoral problematize the mimetic status of their own representations, drawing readers' attention not only to what is said and described, but also to the ways in which pastoral conventions and fantasies obscure reality (2011, 7). While simple and strongly ideological, pastorals present us with fantasies packaged as realities. In the Anthropocene, then, the interest of considering astropastoral is double: on the one hand, astropastoral fantasies are a key component in space expansionist ideologies, while on the other, astropastoral writing can serve to resist ecologically irresponsible space expansionism and to help increase awareness regarding the epistemological complexity of ecological understanding—in particular by shedding light on how mediating technologies such as remote sensors (information capture and transmission devices located on extraterrestrial probes, satellites, and rovers) can foster broader ecological awareness, both on Earth and towards outer space.

The astropastorals that will interest us in the following are *realistic astropastorals*. This is to be distinguished from the ironic use of astropastoral found in texts such as Ursula Le Guin's *The Dispossessed* (1974). These ironic pastoral depictions of space are in no way intended to represent real places in outer space, but instead seem primarily intended to unmask other writer's pretensions to realism as fantastic delusions. Realistic astropastorals do depict real places in outer space—existing places or places that can be made to exist (such as space colonies), and this pretention to realism is a key ingredient in both authorial intention and practice while composing the texts. It forms an essential element in understanding the sense of the text itself, such that we would be misunderstanding these texts fundamentally were we to classify them as fantasy.<sup>3</sup> Of course, no astropastoral is wholly realistic, because they also—and always—involve the contrafactual representation of places in space as if these places themselves were *representations of the Earth*. For this is precisely the essence of terraforming: the idea that humankind will actually be able to reproduce some aspect of Earth out beyond the Earth. This terramimesis needs not be understood as involving the imitation of the appearance of the Earth, it can also be understood as involving the functional reproduction of the Earth's systems with respect to their ability to support living Earthlings. Acknowledging the realist core of astropastoral is important to understanding and criticizing astropastoral as an ideology. In other words, if astropastoral fantasies had no claim to realism, they would be powerless to motivate and justify efforts at cosmic expansionism. It is also this realist pretention that justifies attempts to read astropastorals as tools for critically situating our ecological practices relative to outer space, insofar as this allows us to meaningfully contrast various astropastoral depictions of placed space against one another, observing how they hew to or ignore scientifically established facts regarding the ecologies and planetary systems of alien worlds.<sup>4</sup> Given the truly alien and hostile

nature of known space, the more Earth-like and conventionally pastoral the astropastoral is in appearance, the more likely it is to be an instance of the imperial astropastoral, as opposed to an instance of the ecological astropastoral. The latter rarely depicts places that would appear traditionally pastoral, but instead explores how the real scientific data on alien ecologies might be reconcilable with human dwelling.

The remainder of this text is dedicated to fleshing out these twin faces of astropastoral in the Anthropocene via a close consideration of two paradigmatic cases. The first is a picture of a conventionally arcadian interior of a space colony employed by billionaire space investor Jeff Bezos in a recent presentation of Blue Origin's new lunar lander. This image has been selected for the rich way in which it crystalizes the main lines of the imperial astropastoral ideology in the Anthropocene. The second example is a passage from Kim Stanley Robinson's *Mars Trilogy*, a work whose interest stems from the insights that it provides into the ways that complex astropastoral writing can help to extend ecological awareness out beyond the limits of our immediate terrestrial environments.

### On Jeff Bezos' *Paradis artificiels*

In the astropastoral vision of the future in space presented by the world's richest man, Jeff Bezos, conventionality is pervasive. This comes through clearly in the image reproduced below that depicts the interior of a space colony, an integrally artificial "manufactured world" (Bezos 2021, 248) of the sort envisioned by Bezos' former Princeton professor Gerard K. O'Neill (see Figure 1). Bezos thinks that we need to make such totally artificial worlds and break with "planetary chauvinism" if we want to "colonize" outer space (248), since only in this way can we reproduce Earth-like ways of life beyond the Earth, exactly copying things that would be impossible to engineer in natural space places, above all Earth-normal gravity. The images that he uses to illustrate and sell his vision for the future in space continue with the theme of borrowing from the vocabulary of the pastoral. What, after all, could better symbolize the American version of the pastoral landscape than the red barn by a pond on the left side of the image? Perhaps the university campus nestled behind the fertile fields on the right-hand side? As Aaron Sachs (2013) has documented, American universities have long been laid out in such a way as to evoke American Arcadian ideals, and in particular the idea of education as the way leading towards an ideal reconciliation of nature and culture. Even the train, which might initially appear to sound an anti-pastoral note, contributes to the ideological fantasy that colonizing space will somehow allow us to reconcile and recuperate a lost pastoral past by embracing an extraterrestrial future.



Figure 1. Jeff Bezos, recent presentation of Blue Origin's new lunar lander (2019).

Within the American Arcadianism of the nineteenth century, the train was an ambiguous symbol. It was antipastoral, to the extent that Nathaniel Hawthorne, in a text discussed in the opening pages of Leo Marx's *Machine in the Garden*, opposed the sound of the coming train, its "long shriek, harsh, above all other harshness, for the space of a mile cannot mollify the harmony" (2000 [1964], 13) to the otherwise pastoral repose of sleepy hollow. As Marx glosses this passage, the train represents the intrusion "of a reality alien to the pastoral dream," namely "industrial technology" (2000, 15). But with the American pastoral imaginary, the train was not only a disrupter. It was the train, and the technological progress that it represented, that allowed access to, and the colonization of, the West, enabling the transformation of the supposed wilderness into an agricultural Arcadia (a similar role has been attributed to the rockets that Bezos sells within the astrocolonial imaginary).<sup>5</sup> Thus, while self-critical pastoral writing has often been concerned with exploring the play of dialectical contrasts between the pastoral and its opposite—the city and the country (Raymond Williams 1993 [1973]) or the machine and the garden (Marx 2000)—pastoral ideologists suggest that, in the future, these oppositions will be overcome. It is precisely this state of pastoral transcendence that is represented here. Bezos' train does not disrupt. It belches no smoke, and its passing (at least the animated version of it in Bezos' presentation) occurs without a whisper. It connects and reconciles. It ties the city to the country, the urban and the rural. Its presence within the image suggests that the technology-driven environmental contradictions and concerns of the Anthropocene may be reconciled in the astropastoral utopias of the post-planetary future.

We need only attend to the ecological reality behind the image to recognize that this promise of resolution is a fantasy. The only nature that is reconciled with culture in Bezos' vision of the future is what Timothy Morton has called "Nature" understood here

as pure ideological fantasy (2009, 14). What lies outside the bubble walls of this pastoral world? Presumably a ravaged solar system. The raw materials out of which such a colony might be created are likely to be mined by robots in space as part of a cosmic extension of the extractivist paradigm that has already ravaged so much of the Earth. Presumably the rockets, the means of getting back and forth between this pastoral bubble world and the larger reality will also be (as they already are) a source of pollution, at least of space junk if not also of atmospheric pollution back on Earth. What is most damning about Bezos' fantasy future is not the hidden environmental footprint that it will exert on the cosmic ecosystem but its ideological connivance in convincing present-day Earthlings of the Anthropocene to act in ways that will, in the near term, worsen our collective prospects on Earth. At the core of Bezos' fantasy is the idea that ecological preoccupations of all sorts—be it the nature on Earth or the nature in space—will be negated through technology. As Bezos explains in his presentation, these colonies will not have scorching summers and arctic blasts in winter. They will have “ideal climates” reminiscent of “Maui on its best day” all year long, with “no rain, no storms, no earthquakes” (2021, 248). This dream of a post-Anthropocene world is not concerned with resolving ecological problems, but rather of being done with them, of pushing ecology out of our minds, of insulating humankind from any intrusion by a deranging exterior reality. What we see in this image, then, is a fantasized post-ecological fun house, a dreamworld that is in absolute terms impossible—there is no future in which all ecological concerns have really disappeared, and presumably none in which we could live in a collective delusion without someone at some point deducing that it was the case. Yet it is also a dreamworld whose construction would not be unthinkable to the extent that we might well imagine the architects of future space colonies intentionally endeavoring to utterly insulate their inhabitants from any phenomena which might prompt ecological awareness or concern, effectively striving to banish ecology from collective experience, and leaving industrial actors free to pollute as much as they wished.

### Robinson's Extra-Terrestrial Nature Writing

Kim Stanley Robinson prefaces his *Mars Trilogy* by saying that it is about how Mars “became a place” (2013, 86). His speculative recounting of the placing of Mars—how it moved from being a void (“space”) within the human imaginary to being a real place, replete with human beings who understand themselves as Martians—provides an example of how complex astropastoral writing can absorb but also tweak certain aspects of the nature writing tradition to foster ecological awareness and care towards places in space. Unlike most nature writing, which tends to be written as a direct and immediate

recounting of what David Abram calls the “sensuous” connection between an embodied writer and his or her immediate physical environment (1997), Robinson’s astropastoral is written at a distance. His relationship to Mars is technologically mediated, enabled by photographs, maps, and information derived from carefully analyzed data sets sent back from extra-terrestrial remote sensors. Robinson’s artistry, that is, his ability to take this alien and dis-embodied data and offer us a sense of how it might prove meaningful to future Martians and their sensing bodies, is on full display in the following passage, which narrates the experience of Nadia, a Russian immigrant to Mars on a trip out into the Martian wilderness:

The sun touched the horizon, and the dune crests faded to shadow. The little button sun sank under the black line to the west. Now the sky was a maroon dome, the high clouds the pink of moss campion. Stars were popping out everywhere, and the maroon sky shifted to a vivid dark violet, an electric color that was picked up by the dune crests, so that it seemed crescents of liquid twilight lay across the black plain. Suddenly Nadia felt a breeze swirl through her nervous system, running up her spine and out into her skin; her cheeks tingled, and she could feel her spinal cord thrum. Beauty could make you shiver! It was a shock to feel such a physical response to beauty, a thrill like some kind of sex. And this beauty was so strange, so *alien*. Nadia had never seen it properly before, or never really felt it, she realized that now; she had been enjoying her life as if it were a Siberia made right, so that really she had been living in a huge analogy, understanding everything in terms of her past. But now she stood under a tall violet sky on the surface of a petrified black ocean, all new, all strange; it was absolutely impossible to compare it to anything she had seen before and all of a sudden the past sheered away in her mind and she turned in circles like a little girl trying to make herself dizzy, without a thought in her head. Weight seeped inward from her skin, and she didn’t feel hollow anymore; on the contrary she felt extremely solid, compact, balanced. A little thinking boulder, set spinning like a top. (2013, loc. 2198 of 30988)

The pastoral has often been understood in terms of its conventions, and there is no question that this passage owes much to the conventions set by the post-Emersonian tradition of American nature writing.<sup>6</sup> Like so much of this and other ecologically engaged writing, this text explores what Jonathan Bate describes as the “merging of exterior and interior ecologies” (2000, 1912), the ways in which the alien nature of Mars penetrates into Nadia’s core, resulting in a transcendental conversion into a Martian mode of being, an entry into a higher second nature whose essence is a state of being entangled with Mars and that is characterized by a new consciousness of the inauthenticity of her previous relation to the planet. Yet where other nature writing has

been faulted by critics such as Timothy Morton (2009) for producing the ideologically charged illusion that the narrator is somehow immediately and transparently the incarnation of and thus the true voice of nature, Robinson's very evident conventionality serves to establish critical distance towards these pastoral commonplaces, since these elements precisely serve to render the text more complex, self-evidently an artificial Martian analogy to a natural Earthly transcendental experience. Yet for all of that, Robinson's text realistically represents Mars. As Markus Gabriel (2021) has recently argued, at the core of realism lies the idea that our claims about reality can be shown to be *true* or *false*. Back in the time of Camille Flammarion and Percival Lowell, there were actually few statements that humans could make of this sort, since the reality of Mars for nineteenth-century astronomers was a tiny dot in a telescope, a data point that hardly allowed one to determine whether Mars was inhabited or not, or perhaps more relevantly, whether it was indeed, in the words of Flammarion, a pastoral planet boasting scenes "analogous to those which constitute our terrestrial landscapes," such as "transparent springs" and the "beds of stones rendered golden by the sun" (1892, 298). Today, however, our imaginations no longer spin in the same void. We don't know what it would be like to experience Mars as Nadia does, but we also know a significant number of things that are true about Mars and that some of these truths find their way into Robinson's text.

We know these things because we have sent multiple unmanned missions to Mars. These missions have transmitted back a wealth of information that allows us to make a great number of true statements about Mars and how it is, statements that were unavailable as verifiable to purely planetary human beings like Flammarion. Since the launch of the first Mars missions, human beings have come to be able say things about Martian reality that they can know to be true or false based on data gathered on Mars and observations stemming from viewpoints well beyond the surface of the Earth. Robinson's knowledge of the totality of the available areological science is well known. As Oliver Morton has pointed out, while writing the *Mars Trilogy*, Robinson extensively employed maps of Mars and carefully consulted the stunning photos sent back from the Viking and Mariner missions (2002). He talked with scientists to understand as closely as possible the physics and the biological realities of the planet. Consequently, the *Mars Trilogy* is, in the words of Oliver Morton, the "most textured and varied evocation of a mapped Mars in our literature" (2002, 179). This research, and thus reflections of humankind's real relationship to Mars itself, shines through in the above-cited passage. The color pallet of maroon and violet are not of Earth but of Mars, as they are reflective of both the colors of the Martian sands and the light effects that would be produced by light passing through the specific chemicals that make up the thin Martian atmosphere.

The vistas described may recall the American west, but they also mirror those sent back from the Mars rovers. Robinson's effort to draw our attention to the size of the sun, on the other hand, reminds us that no matter how akin to Earth Mars might be, the distance between the red planet and the sun will always differ from that between the sun and the Earth.

That Robinson's text really is a product of our relation to Mars, and that it could not have been written but in the context of a post-planetary age in which human beings can obtain data from Mars, does not mean that the scene and the experience that it depicts is in any way identical to the experience of being on Mars as it would be narrated by a human being on Mars. In this sense, the language, particularly where it touches on feeling and the evocation of embodied experience that is so critical to lyrical writing—including the pastoral tradition—remains speculative, little more than analogies. How this is the case, for example, becomes clear when we think carefully about Robinson's evocation of the colors of Mars. Color is an important theme in the passage above and elsewhere in the *Mars Trilogy*, and redness is often held up as a *differentia specifica* separating Mars and Earth. Strictly speaking, we do not know what color Mars would be for humans on Mars. Sure, scientists have sent cameras to Mars. They have shot images which included color charts using known colors to aid in calibrating the colors of the images sent back to Earth, which means we know what color things on Mars objectively are.<sup>7</sup> But as Wittgenstein (1977) pointed out in his *Remarks on Color*, just because we know that a color sample is red does not mean that it appears to embodied and contextualized human observers as red. The same red sample will not seem red in certain conditions and for certain observers (for example, in ultraviolet light or for Daltonians). The language games that are built upon the color red mean that for most of us, most of the time, in Earth-like conditions, we are able to identify a thing that counts as objectively red as coinciding with the wide range of experiences that we subjectively count as seeing red. Yet the fact of the matter is that no one has yet seen red on Mars. More to the point, we perfectly well know that an eye is not a camera, which is to say that the effects of Martian gravity on eyes might make the experience of seeing red on Mars somehow different from the experience of seeing red on Earth. The fact of the matter is that we just don't know, and we will not know until human beings actually go to Mars, to test out their language and their language games, a practice that will no doubt also coincide with a confrontation with the limits of their language, for example the discovery, remarked by Robinson, that English has “surprisingly little to offer” in describing the colors that seem to dominate on Mars, namely “that stretch between red and blue” (loc. 29119 of 30988). In sum, and to borrow a term from Markus Gabriel, the experience of seeing the colors, and indeed of having embodied experiences of Mars on Mars is just not, in our historical present, a field

of sense that permits us to make statements with an ontological status that would be other than fictive—which is not, of course, to say that Robinson’s recounting of the experience of being with Mars is verifiably false. The fact that we humans can really know more than ever before about planets that are not the Earth in no way implies that we know everything about these planets or that some of the things that we might think that we know about them are either fictions or falsehoods. One of the virtues of Robinson’s text, and of the ecological astropastoral in general, is the way in which helps us to become aware of ontological complexity and the richness of the relationship between humans and other planets that is characteristic of our post-planetary age. Thanks to technology, Mars is at once closer to us than ever and yet more alien, to the extent that the more we learn about it the more aware we become of the analogies, biases, and exaggerations that condition and limit our expectations regarding how it might be for us to really be there.

The ecological astropastoral, like kindred forms of terrestrial locodescriptive writing, plays a role in the cultural “placing” of space environments, to borrow a term from Lisa Messeri (2016). Humans place space by interacting with it, by changing it, but also by allowing it to change us through cultural practices like astropastoral. Placing space enriches our cultural imaginary of outer space, and this is something that matters immensely in the Anthropocene, not only because a placed space can help to tear us awake from fantasies which promise that a future in space will deliver a return to an Arcadian past, but also because placing space can help us to become aware of both the uniqueness and value of sites in space. Once we accept that the Mars of the *Mars Trilogy* is to some degree really Mars, we cannot accept that Mars—or anywhere else in placed space—is what Space 2.0 would like us to imagine that it is: the apotheosis of what Heidegger called a “*Gestell*” or standing reserve (2009, 23)—a perfectly empty extractive zone consisting of nothing but anonymous matter and raw materials that can be exploited and commodified with no ethical pangs of ecological conscience.

### Astropastoral and the Future(s) of the Environmental Humanities

With respect to this fact, it important to emphasize that the realism in the ecological astropastoral is not derived from speculation or anticipation but is inseparable from the historical fact that we are already, from a technological point of view, a post-planetary species. We already have an environmental responsibility towards anyplace in space that has been placed—because we have already established a relationship with that place, often because we have sent remote sensors there. Acknowledging that we are post-planetary has heavy implications for understanding how ecocritics ought to address

Space 2.0. It should prompt us to avoid embracing Sam Kriss' (2015) fraudulent argument that space does not really exist on the pretense that doing this will prompt us to better care for the Earth. It should encourage us to employ our now ever richer sense of the reality of outer space against the arguments of space expansionists, since emphasizing this reality puts us in a position to defend both placed space and the Earth itself against the environmental carelessness that they frequently strive to justify. As we have seen via our reading of Bezos, one core element in the imperial astropastoral ideology is the belief that outer space is somehow at once real and empty, pure potentiality capable of being molded into whatever we desire it to be—even the Earth of the past. Yet a placed space reminds us that even if we successfully become an intraplanetary species, places in space will ever differ from the arcadian bowers of Earth's (nostalgically recalled) past. More to the point, attending to astropastoral placings of space can encourage us to attend to already preoccupying extraterrestrial environmental issues such as the proliferation of space junk, thus prompting us to deepen our awareness that even if we were to leave the Earth behind, we would never leave environments and environmental concerns behind. Such a recognition punctures the fantasy inherent in Michael Gormley's (2011) prediction that becoming extra-terrestrial will issue in a post-Anthropocene era that he calls the "Astropocene." Becoming interplanetary will not allow humans to escape from the Anthropocene into a reborn cosmic state of nature. It will only reinforce the already evident fact that the Anthropocene understood as anthropogenically driven system change is not merely a phenomenon that describes the effect of humankind on the Earth's system, but also the effect of human beings and their technologies on any system. Disregarding this fact risks contributing to the unthinking extension of destructive environmental practices out beyond the Earth, while taking it into account should prompt us to take responsibility for the ecological effects that are already being caused by the extra-planetary extension of our technosphere.

Astropastorals in the Anthropocene thus awaken us to the fact that we are already a post-planetary species burdened with extra-planetary ecological responsibilities that are growing as our economy, and perhaps soon our habitat, extends out beyond the terrestrial ecosystems where the pastoral, and humanity, first evolved. Where the imperial astropastoral articulates the fantasy of a cosmic expansion of a "good Anthropocene" in which an existing human fantasy vision of the good life has been imposed beyond the Earth, the ecological astropastoral imagines how encounters with the alien might, in their straining of the bounds of our sense and our conventional representations of the world around us, help us to imagine new and less self-destructive ways of relating with our environments, thus contributing to efforts to imagine and build a better Anthropocene on Earth and off.<sup>8</sup>

### Notes

- <sup>1</sup> As argued in Paul J. Crutzen and Eugene Stoermer's oft-cited article "The Anthropocene."
- <sup>2</sup> In this, astropastoral, like the pastoral, is an accessory part of colonial ideologies (Diane Davis 2007), part of what Guillaume Le Blanc (2020) has called "green colonialism," and the ultimate realization of the astropastoral ideology would be the cosmic extension of what Donna Haraway (2016) and other thinkers have called the "Plantationocene."
- <sup>3</sup> This is not to say that the realities portrayed are not fantastic, in the sense that the authors of these text could simply be wrong about how space is.
- <sup>4</sup> In this sense, it is hardly ridiculous to compare the accuracy of depictions of Mars in Kim Stanley Robinson's *Mars Trilogy* (2009) and Andy Weir's *The Martian* (2011), since even if both are works of fiction, Mars exists intradiegetically within their fictive universes as an extradiegetically real object. This is not to say that either Robinson's or Weir's fictive characters actually exist on Mars, however. On this, see Markus Gabriel's discussion of the ontology of real places in fiction (2021, 56–57).
- <sup>5</sup> It is important to recognize that we are here transcribing but not endorsing an ideology. As Deondre Smiles (2020) and other scholars have pointed out, the idea that America was a wilderness was above all a way of overlooking the legitimacy of the Native Americans who were already inhabiting the land. On the analogy between the train and the rocket with respect to the settling of outer space, see Bruce Mazlish (1965).
- <sup>6</sup> On the role of convention in the pastoral, see Paul Alpers (1996, 79–134).
- <sup>7</sup> Oliver Morton offers a detailed and extremely interesting discussion of the scientific—but also political—effort to establish the colors of Mars (2002, 99–101).
- <sup>8</sup> The notion of the "good Anthropocene" is discussed extensively in David Grinspoon (2016). As he points out (and I agree), we do not have a choice of opting out of the Anthropocene. It is unrealistic to imagine that we can simply cease affecting the functioning of the Earth system (or of any other planetary system which we might inhabit). We can, however, affect the Earth's system in ways that are less problematic for the continuation of life on Earth. In Grinspoon's vocabulary, this better way of affecting the Earth's system, once accomplished, would bring about the "good Anthropocene." I find it useful, however, to distinguish between the "Good Anthropocene" and the "better Anthropocene." By aligning the good Anthropocene with the imperial pastoral and opposing this to the pursuit of the better Anthropocene via the ecological astropastoral, I mean to suggest that some efforts to change the Earth or other planets seek to impose a pre-given idea of what the environmental future should look like (like a pastoral), while other efforts seek to discover, through interactions with the non-human world, better ways of Anthropocening, which is to say different ways of modeling or imagining ecological being that emerges through ongoing co-creative processes whereby humankind transforms itself and its pictures of its environmental ideals in the direction of better environmental adaptation at one and the same time as environmental systems are transformed in the direction of improved human survival.

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