## Part One: The Final Frontier

#### Existing protocols related to space approach it from the standpoint of a defined limit to the Earth and “Outer Space.” This enables the space outside the atmosphere to be regarded as somehow separate from relations and operations on Earth. In reality, Earth is imbedded in the solar system and focusing on “Outer Space” only reveals the simplicity of our understanding of the Anthropocene, enabling visions of the future that dehumanize each of us. Enables space to be cast the same as the previous imperial projects before it, enacting genocides, colonialism and climate change.

Klinger 2019 [Julie, Frederick S. Pardee School of Global Studies, Boston University] “Environmental Geopolitics and Outer Space,” **Geopolitics** <https://www.bu.edu/pardeeschool/files/2019/03/Environmental-Geopolitics-and-Outer-Space.pdfEM>

Viewed another way, planetary protection protocols represent environmental justice on an interplanetary scale. This international code of GEOPOLITICS 21 conduct is designed to protect otherwise uninvolved populations of humans and other organisms from the activities of an extreme minority. By the same token, protocols of containment and control for the purposes of environmental protection on Earth and in outer space generate a particular environmental geopolitics that redouble the rationale of placing space-based infrastructure on Earth in “peripheral” areas, illustrated, for example, by the proposal to process biotic specimens from outer space aboard ships in international waters (Takano et al. 2014). The idea is that international waters provide a legally and environmentally “open” space in which specimens can be processed with minimal risk of contamination. The fact that international waters are teeming with organisms that circulate globally (Helmreich 2009; Steinberg 2013) problematizes this containment rationale. The planetary protection protocols, nevertheless, reflect a broad recognition that outer space is much more than the open frontier beckoning to astro-imperialists. Rather, it requires careful consideration over what we put into and bring back from outer space (Reisinger 2018), and outlines a “leave no trace” framework to guide the manner in which humans and robot surrogates move back and forth across our atmosphere (Brueck 2018). The acknowledgement that there may be other sensitive biological systems with the prerogative to exist constrains the territorial ambitions of space exploration and shifts the strategy to one of careful exploration rather than the frontier ideologies of “terraforming” alien worlds for colonization or “a new gold rush” (Pelton 2016; Sparrow 1999). Policy decisions going forward will determine the extent to which environments on Earth and in space are protected by the planetary protection protocols. These are subject to change with the successes and failures of competing interest groups. As private sector interest in “colonizing” space has grown in recent years, planetary protection protocols have been assailed for “inhibiting a more ambitious agenda,” to colonize Mars in particular (Fairen and Schulze-Makuch 2013). In cases where colonial boosters have not discarded planetary protection protocols wholesale, they have advocated for a looser ethics of “preservation” rather than “protection” (Cockell 2005). Transferring the logic of Earthly conservation regimes to other planets, this approach would instead carve up unexplored worlds into spaces of acceptable and unacceptable contamination, much in the same way that certain fractions of national territory on Earth are designated as “preserves” set aside from the planetary project of expulsion, pollution, and the creation of waste under capitalism (Moore 2015) This approach equates exploration with contamination, which extends to outer space the colonial-capitalist processes that have devastated landscapes and lives on Earth. The upshot is if we insist that contamination is inevitable, then we will likely cease to invest in measures to prevent contamination, and 22 J. M. KLINGER so it will become a self-fulfilling prophecy. The danger here is a coupling between the religious zeal driving space colonization (Bjørnvig 2013; Sage 2016; Schwartz 2017; Slobodian 2015) and the assumption that exploration inevitably equals contamination will slide into logics of contamination as a “good” thing, in the chauvinist sense of Earthly “seed” impregnating “virgin” worlds (McKay 1990). Reconceptualizing the cosmos according to a binary framework of masculine agency6 that is compelled to act on the (imagined and violently enforced) passivity of all other things has a clear environmental geopolitics. It is a rather facile extension of the narrow understanding of human life – only property-owning white men count as human (NAF 1789) – and the environment – created by God for man to enslave (cf. Bacon 1834, 224) – that underwrote the European colonial project and the rise of the Western world order with its genocides, mass extinctions, and anthropogenic climate change (Collard 1989; Federici 2004; Fox Keller 1985; Merchant 1990, 2003).

#### To focus narrowly on the capitalist visions of NewSpace is to impoverish true scholarship on the question of the biopolitics of capitalist accumulation in space. NewSpace sells a narrative of human intelligence and creativity spreading to the cosmos and this animates their endeavor as much as accumulation.

Valentine 2012 [David, Ethnographic Studies, U Minesota] “Exit Strategy: Profit, Cosmology, and the Future of Humans in Space,” **Anthropological Quarterly**, Volume 85, Number 4, <https://muse.jhu.edu/article/488890/pdf?casa_token=MPfrK_XROVwAAAAA:lqD3T3mIH2wIij2leobIdufjPe41V2XHVGFQK4FrsuTfaAMYNe_1pAiSelitKR6kD0UAxxM/EM>

In this paper, I argue that beyond the possibilities for new forms of capital investment and profit, enabled by commercial space enterprise (and which, as I will show, are not incidental by any means), it is actually this promise of a radically transformed human social future that underwrites NewSpace discourses and activities. Indeed, understanding NewSpace as only the latest incarnation of neoliberal capitalism, this time written into the stars, impoverishes our understanding of how powerful social actors shape deep human futures through cosmological commitments to radical views of what it is to be human, and contributes to the narrative of a totalizing capitalism that can account for all human futures (cf. GibsonGraham 2006). In short, the practices of powerful social actors should not be reduced to the abstracted workings of “the market” but rather, to be fully understood, they must be considered as social, ideological, but also cosmological (Chesluk 2008, Ho 2009).

#### Casting of “Outer Space” as the geopolitical extension of human biopolitics from earth to “new environments” like space creates a totalizing vision of human progress that survives on a separation between human and environment, space and Earth. Narratives of extinction and survival only play into this problem and replicate it, locking us into static and myopic views of futures. Our future will simply be dominated by the present. We focus on existential threats in space rather than how space nourishes life on the planet every day. Creates a cartography of space that replicates Earthly biopolitics. Feeds into the loop of war and colonization perverting the so-called “Final Frontier” in the search for a new Eden.

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Defining the outer space environment can take on mind-bending complexity in the attempt to reconcile infinite distances with quotidian lived experience. It has proven challenging enough, as Hecht (2018, 112 emphasis original) noted, to “hold the planet and a place on the planet on the same analytic plane.” But just as neither place nor planet make sense without the other, so it is with Earth and space. We define the outer space environment relationally – in relation to Earth, to the anthropos, to our imagined absence, or in relation to human visions of possibility and peril. Relational definitions of the outer space environment invariably draw on relational geographies across Earthly environments, which, following the feminist geopolitical approach, reveals how the perhaps unexpected connections between people, places, and power produce outer space environments on Earth and in space. Environmental justice shares this epistemological orientation. The premise of environmental justice is that the rights of those who suffer environmental harm “have been systematically usurped by more powerful social actors, and that ‘justice’ resides in the return of these rights” (Capek 1993, 7). For the environmental justice framework to help us make sense of outer space, we must not only understand outer space as an environment, but also think GEOPOLITICS 7 through how human engagement with outer space constitutes environments in which (in)justice can occur. Outer space environments are mutually transformed with human society when we encounter them. Whether people and machines have altered a particular interplanetary landscape (Gorman 2005) or observed the far greater number of sites that are unlikely to be visited by humans or robots in the future (Vertesi 2015), coming to know new space environments ignites human imaginations with new possibilities. New imaginaries have material consequences, informing policy, practice, and investment choices (Kearnes and Thom 2017; Klinger 2017; Messeri 2016). Material consequences are mediated through the technological capacity to deal with dynamics of distance, temperature, radiation, and institutional capacity to orchestrate ongoing engagements with outer space. In the broadest sense, the environment of outer space encompasses everything that was and ever will be (Hawking and Penrose 1996). Perhaps because of a certain epistemological agoraphobia that inhibits geographical engagements with questions of infinity, the political economic effects of the popularization of these theories over the course of the twentieth century has received limited attention (Giudice 2012; Riordan 2001), and this totalizing scale has been left outside of most studies of human-environment dynamics. Using environmental geopolitics, it is possible to build our epistemologies out to the totality without reproducing earlier religious-themed schemata that placed the heavens utterly and ineffably “beyond.” Put simply, outer space is a global environment insofar as it is the environment in which Earth resides. By thinking of outer space as Earth’s environment, much as we might think of the space within our atmosphere as “our” environment, this “nested” approach replicates problematic conceptions of the environment as a separate thing outside of the self. Our planet is of the cosmos, an accretion of matter floating through space that consolidated over billions of years and now hosts its own diverse environments of which we are. Outer space as a global environment is dynamic, as our planet spins on its axis at a constant speed while orbiting the sun at thirty kilometers per second along a trajectory that is nine hundred and forty six million kilometers in circumference. Anything that enters this trajectory at a given point in space and time can also enter the global environment. Large objects such as asteroids and space weather phenomena, such as solar flares, capture more popular attention because they may spectacularly damage orbital and terrestrial infrastructure. Less well known are the daily showers of microscopic space dust that nourishes the microbial life that regulates global oceanic and atmospheric environments (Baker 2002; Helmreich 2009). 8 J. M. KLINGER Anthropocene and Outer Space Even with the expansion of Anthropocene literature, efforts to think at the scale of the planetary (Spivak 2003) draw our attention “inward and downward” (Olson and Messeri 2015), to the regions of the cosmos where human activity is concentrated or to our own solar system (Dickens and Ormrod 2016; Praet and Salazar 2017; Salazar 2017a). Noting this tendency, Olson and Messeri (2015), building on Agrawal (2005), proposed a “heliosystemic environmentality” to describe how our concept of the environment centers on the sun and its crucial role in sustaining life on Earth. Thinking of the environment as something on the scale of our solar system amplifies the significance of environmental changes on Earth. As Salazar (2017a) has observed, the loss of Earth’s polar ice caps is made even more dramatic when one considers that they are not only important to stabilizing Earth’s orbit, they are also likely unique in our solar system. Anthropocene concerns with global environments have, in practice, delineated inner and outer environments, where the “outer” environments consist of the spaces beyond the atmosphere and beneath the lithosphere. This brackets what tends to count as the human environment to the space between the surface of the Earth and the limits of our atmosphere (Olson and Messeri 2015), although indigenous concepts of the anthropocene have more nuanced conceptions of boundaries (Inoue, Aoki, and Moreira 2017). But much of climate change, everyday life, and localized environmental experience unfolds within this space, hence our anthropocentric “surface bias” (Bebbington and Bury 2013) when defining what, and where, constitutes the environment. The atmosphere serves as a boundary layer between life and death, the biosphere and the beyond. Most of life as we know it can only live within this layer between the ocean floor and the atmosphere, indicating that definitions of the environment tend to be synonymous with life, although the growing research on “extremophiles” living beneath glaciers or on hot ocean vents animates the search for similar sorts of life on other moons and planets (Hashimoto and Kunieda 2017; Helmreich 2009; Rothschild 2007; Salazar 2017b; Vaidyanathan 2017). As fears over the precarity of life on Earth become increasingly salient within the Anthropocene (Pain and Smith 2008; Swyngedouw 2013), the search not only for life but also for habitable exo-planets represents an extension of environmental sensibilities to other parts of our solar system and galaxy (Helmreich 2009; Olson 2018; Segura et al. 2005). This is driven by multiple motivations: from scientific curiosity, to the pursuit of profits, to an apocalyptic sensibility looking for an escape from an Earthly doomsday scenario (Dittmer and Sturm 2010; O’Neill 2000; Walker 2018). GEOPOLITICS 9 Each of these approaches to the question of life in our cosmos informs different material practices in Earthly environments. The question of life in relation to outer space takes three primary forms: the search for new forms of life; experiments with living in outer space, and mitigating threats of an uncertain future on Earth. The latter compels humans to fantasize about colonizing the cosmos in order to survive. This abiding concern with the future informs a series of “anticipatory practices,” intended to provide relief to some – not necessarily all – lives (Anderson 2010). Building on this, environmental geopolitics of outer space are therefore about life and death. This is not simply a matter of “making live” and “letting die” but about rethinking environments in which life and death are both possible and predictable (Foucault 2003). The public declarations of Mars One activists’ willingness to die in space are a display of human volition to approach a deadly environment in order to make it livable. Through their sacrifice, they hope to create extraterrestrial spaces where life and death are rendered more predictable (Greene 2014; Jamieson 2016). In the process of remaking environments in outer space, understandings of the human position shift in relation to Earthly environments. Most critically, the dominant trend seems to be rethinking Earth as something that can be “left behind” (Bianco 2018) in the relentless pursuit of a “somewhere else” that looks like Eden (Messeri 2017).

## Part 2: Common Heritage of Death

#### The concept of space as a “global commons” or “common heritage” of humanity underwrites the destruction of natural habitats as they are preserved only for “heritage” potential. Because they are subject to the state of exclusion, private entities cannot claim space but they can take as much as they want. Central to question of the unjust nature of private appropriation. Ignores inequity. Takes existence of commons as an ontological given instead of a construction.

Beery 2016 [Jason, Geography, School of Environment and Development, University of Manchester] “Unearthing global natures: Outer space and scalar politics,” **Political Geography** <https://www.sciencedirect.com/science/article/abs/pii/S0962629816300130#!/EM>

During the 1960s, the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) worked to develop laws that would regulate activity in outer space. In the treaty that followed, outer space, a resource that encompassed Earth, was to remain outside of existing political borders, free from sovereign claims, and open to use by all states. Because of these stipulations, many have labeled outer space a “global commons” or “global resource.” In most academic analyses of global commons, these laws rejecting sovereign claims are treated as the de facto way that a resource that materially spanned all states would be governed. As debates in and outside of COPUOS indicate, however, the status of outer space as beyond states’ sovereign territorial jurisdiction was not given. Rather, as I demonstrate in this paper, the status of outer space and orbits as beyond sovereign territories is a result of political contestation over the understanding of physical properties of outer space and Earth. I trace the debate in the late 1960s and 1970s over the border between sovereign air space and “global” outer space. This was a debate over how outer space would be incorporated into political–economic relations. By using a production of nature approach that recognizes the importance of physical materialities and scalar politics, I demonstrate the constructedness of outer space as a “global” resource and how its construction as such furthered uneven political–economic processes. Such analysis illuminates how such socionatures beyond and across borders are produced to achieve particular political–economic outcomes. **Introduction** When the first satellites and spacecraft entered orbit in the late 1950s, questions about outer space, law, and sovereignty began to arise. Did laws exist in outer space? Did states’ territories extend vertically into outer space? If so, how far did they go? Outer space presented a challenge that had not been encountered with most other natures: outer space in general – and orbits in particular – did not fall squarely into one or multiple territorial jurisdictions. Outer space surrounded Earth. Because of this incongruence, its legal status was unclear, and so, too, was how activities in outer space would affect political, economic, and social relations on Earth. Fearing the extension of Cold War tensions and exacerbation of disparities in economic development at a time of formal decolonization, several states at the United Nations set forth to devise laws and regulations to govern this resource of uncertain jurisdiction. On January 27, 1967, the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* opened for signature. This treaty addressed how outer space and the benefits from activity there would be incorporated into terrestrial relations. For its time, its content was seemingly radical. Not only did the treaty declare that the exploration and use of outer space “shall be carried out for the benefit and in the interests of all countries,” and that outer space “shall be free for exploration and use by all States … on a basis of equality” (United Nations, 1966), the second article banned all forms of national appropriation, including by claims of sovereignty, of any part of outer space. This was the first multilateral legal instrument in which “centuries old state sovereignty gave way to international global commons” (Jasentuliyana, 1999, 33). Largely because of these provisions, outer space was and continues to be celebrated as a “global commons” and “global resource” along with Antarctica, the high seas, and sea floor (Buck, 1998, Vogler, 2000). Much academic literature addressing “global commons” and “global resources” extends from historical descriptions of the issues, concerns, and politics of the negotiations (e.g. Elliot, 1998, Vaughn, 2007) to evaluating and analyzing the success and limitations of the governance regimes (e.g. Buck, 1998, Vogler, 2000). In such accounts, however, there is little concern for how resources come to be located beyond sovereign jurisdiction and why all states have legal access to them – that is, how they come to be “global”: The spatial extent or location of the resource beyond or across multiple sovereign territories is taken as given. Outer space’s supposedly given extra- or trans-territorial character is the origin of and reason for the construction of that resource as a “global commons” or “global resource.” In this sense, the legal provisions that ban sovereign claims and ensure equal access to theseresources are treated as *de facto* outcomes of the incongruence of the spatial extent of the resource with existing territorial jurisdictions. In this perspective, the “global” character of these spatially vast resources is often tied to the connection to Earth as a physical unit. As in other deployments, such as “global” environmental issues or threats, the adjective “global” is used to distinguish large-scale (either in Cartesian extent, degree of socionatural interconnectedness, or number of states affected) biophysical objects, phenomena, or processes from ones smaller in scale or within particular bounded territories (Dalby, 2008, Herod, Wright, 2002, Mansfield, 2008, Marston, 2000). At the same time, the term’s “invocation of the globe” suggests “a naturalism, a taken-for-granted, obvious space and political context” (Dalby, 2008, 428). Because of this “naturalism,” however, global environmental issues, global resources, and global commons often are taken for granted as ontological givens both in popular discourse and in geopolitics and international relations literature (Bulkeley, 2005). As highlighted in recent works on various “global” environmental issues (e.g. Bumpus, Liverman, 2008, Liverman, 2009, Swyngedouw, 2010, Whatmore, 2002), the prima facie acceptance of natures as “global” masks important ways such natures are materially or discursively incorporated into political, social, and economic processes. As Bulkeley (2005, 879) explains, “This naturalization of the ‘global’ as the arena in which designated global environmental problems take place effectively serves to disembody the causes and consequences of such problems, and their construction as such, from practices and politics taking place at a multitude of sites and scales of governance.” Drawing from such critical takes on “global” environmental issues, this paper employs a production of nature approach that attends to the role of the biophysical properties and the politics of their scalar construction to argue that “global” natures are far from ontologically given and are instead socionaturally constructed. While the vast, encompassing spatial extent of such natures is central to the way these natures are legally and politically governed, the spatial extent is also a particular site of scalar political contestation. Indeed, these scalar constructions of nature fundamentally affect how the resources are incorporated into political–economic processes. Questioning the “global” character of these natures in this way reveals the power asymmetries at the heart of such constructions. To do this, I focus on the legal history of outer space. Outer space is central to the operation of routine political–economic processes that shape terrestrial geographies (Dickens, Ormrod, 2007, Dodge, Perkins, 2009, MacDonald, 2007, Warf, 2007). For example, orbits are used for a host of activities, including military surveillance, navigation, communication, and remote sensing, which amount to, by “the most reliable estimates,” US$150–165 billion in revenue for worldwide space-related products and services (OECD, 2011, 9–12). The benefits of these space technologies have been uneven, however. Satellites space technologies, for example, have reflected terrestrial power relations (i) through large, long-standing imbalances in the number of satellites, especially communications and reconnaissance, and in the number of earth stations between industrialized and developing countries, (ii) through imbalances again between industrialized and developing countries in participation in international satellite organizations, (iii) through re-regulation, neoliberalization and privatization of major satellite networks such as Intelsat, which are primarily based in industrialized countries, and (iv) through the commodification of satellite-based and enabled products, such as photo imagery (Warf, 2007). Moreover, they have been used to exert global military power across Earth through surveillance from orbit (MacDonald, 2007), which, for example, the US military utilized to carry out anti-terrorism operations in Afghanistan in the early 2000s (Beck, 2003) and to locate and capture of Osama bin Laden (Whitlock & Gellman, 2013). In these ways, outer space has been a means to contemporary imperial practices on Earth (Dickens & Ormrod, 2007). This paper demonstrates how outer space was legally and scientifically constructed as a “global” resource – and not as one that could be divided into sovereign territories – and how dominant states constructed outer space and orbits as “global” natures for their own benefit. It begins with a brief overview of the production of nature approach, which, unlike most geopolitics and international relations approaches, recognizes space and nature as socially constructed and recognizes the role of the biophysical characteristics of natures in the production process. Following McCarthy’s (2005) call to examine the production of nature and scale as one process, this analysis recognizes the centrality of the politics of scale as part and parcel of the production (and definition) of these natures. The second part of this paper demonstrates how and why outer space has been constructed as a “global” nature. This empirical section first focuses on the socionatural production of outer space as a “global” nature in the drafting of the “Outer Space Treaty” in the 1960s, highlighting the role of movement of materialities in this process. It then discusses the role of materialities and the politics of science in the political contestation over the location of the border between sovereign air space and “global” outer space in the 1970s. The outcomes of this debate are central to the ways in which outer space has been incorporated into uneven political and economic processes and relations. By excavating the socionatural construction of outer space, we can open up the political–economic unevenness that the moniker “global commons” obscures.

#### “Global Commons” replicates a biopolitics of war that instrumentalizes space as a resources defining what it is to be human in terms of the primitive notions of accumulation and colonization, engaging a perpetual state of war that spreads through the cosmos underwritten by our commitment to “utility” Devalues life itself. Thus the ROB is to becomes a negotiation of knowledge, a deciding of axes and boundaries. Evaluate our aff by its ability to reorient political perception and action.

Craven 2019 [Matt, Professor of International Law, SOAS University of London] “‘Other Spaces’: Constructing the Legal Architecture of a Cold War Commons and the Scientific-Technical Imaginary of Outer Space,” **European Journal of International Law** Vol. 30 no. 2

121 In the first place, as the Nigerian representative in COPUOS noted, the language of the ‘common heritage of mankind’ had facilitated a subtle shift from a language of exploration to that of exploitation.122 Outer space was no longer simply a site of speculative scientific endeavour or open to projects of exploration and discovery, but it had become a resource or, indeed, as Myres McDougal and others were to explain, a myriad of resources of varying kinds, in which everything from solar radiation, magnetic and gravitational forces, wave lengths, geostationary locations123 through to meteors tracking through the solar system came to be conceptualized in terms of their ultimate ‘value’ or ‘utility’.124 Once again, thus, one sees the presence of a particular technological rationality undergirding the outer space regime, in which the natural and human environments were to be understood to be the objects of an instrumental reasoning that concerned itself with how they might be manipulated, controlled, exploited and, ultimately, commodified, and in which the technology through which those ends were to be both conceived and achieved (space rockets, probes, telescopes, satellites, planetary rovers and so on) would take the form of a passive, neutral, medium  –  as mere machines and mechanisms or as ways of doing things.125 The embrace of this rationality may, on the face of it, be seen to have been utterly perverse: the ultimate outcome of a desire to avoid a competitive stripping of the resources of the moon and other celestial bodies, resolving itself in the creation of a regime in which that objective, and that way of thinking about our planetary environment, was not just dominant but also subordinate to everything else. The technology through which those projects were to be made thinkable, furthermore, was clearly only ‘neutral’ to the extent that one could separate its existence from the fact of its (largely exclusive) possession and control by two violent, competitive, superpowers.126 As Marcuse observed, however, that same rationality – common to both Western and Soviet state forms127 – cut deeper than this. On the one hand, the technologies of mass communication, surveillance and warfare were to profoundly shape the perception, experience and apprehension of everyday life, creating a ‘technological reality’ of an ‘object world’ conceived ‘as a world of instrumentalities’.128 On the other hand, however, that same rationality would serve to alienate the subject from their life world through their incorporation into the ‘technological community of the administered population’.129 The domination of nature that technology appeared to enable was thus only one side of a formation that had, as its complement, a human domination propagated through the technological ‘administration’ of the subject and the manufacture of human desires, needs and interests.130 To the extent, then, that the Moon Treaty embraced this rationality, it was one that was ultimately pacifying in effect, swallowing up and repulsing all alternatives, bringing all within the sway of the same totalitarian tendency. In the second place, and as an apparently countervailing measure, was the idea that access to, and the use of, outer space resources should be subject to an international regime, the ‘purposes’ of which were set out in Article 11(7). Just as the International Telecommunication Union managed the ‘technical’ distribution of wavelengths and frequencies, allocating slots in the geostationary orbit, and just as the World Meteorological Organization coordinated the collection and dissemination of meteorological data, so also it was envisaged that the resources of the moon should similarly be subject to the oversight of an international regime of rational administration. The anticipated regime, it was explained, would concern itself with the ‘orderly and safe development of the natural resources’, their ‘rational management’, ‘the expansion of opportunities in the use of those resources’ and an ‘equitable sharing of the benefits’. The model of administration imagined here was one clearly designed to displace the possibility of unrestricted pillage or of primitive accumulation, and the language deployed elicited a sense of distance from precisely those ideas. No mention is made of the practices of extraction, commodification or exploitation that might be enabled; rather, it is faintly suggested, the moon might be ‘improved’ through its ‘development’, terraformed perhaps into a site fit for tourism or colonization? Yet, by the same token, the arrangements seemed to be concerned merely with the transfiguration of relations of power into bureaucratic technique and, in doing so, maintained in place the very same conditions that underpinned the practices to which it was opposed. Certainly, it was clearly envisaged that a further agreement would follow, setting out in more detail the administrative arrangements required for the purposes of the ‘equitable sharing of benefits’. Certainly, it was also possible that such arrangements might include the transfer of technology, the sharing of science and the distribution of profits. But no measure of administration could avoid the observation that the regime was to authorize in space precisely the same operations that had been productive of the material inequalities on earth, albeit this time it was ‘colonization’ or ‘conquest’ in the name of humanity (‘mankind’) rather than some small subset of the same. Finally, and related to this, the very ‘commonness’ of humanity to which the regime gave expression was ultimately a vestigial one. Humanity was to be represented here, not as a universal community of free-willing subjects or as a set of values – of rights or needs – but, rather, through the mediate category of material ‘interests’; the exploration and use of the moon, as Article 4 puts it, ‘shall be carried out for the benefit and in the interests of all countries’. What humanity had in common, thus, and what defined it once one took away the categories of rule and ownership, was a fluid, economy of ‘interests’,131 the fulfilment of which was always more or less and which was open to be bargained, traded, sacrificed and exchanged. These ‘interests’ assumed the same metaphorical function of assets and liabilities in double-entry bookkeeping – as abstract quantities capable of being compiled, indexed, managed, balanced and administered in the same way as the material resources to which they appeared to relate. While undoubtedly central to the foundations of both capitalism and liberal democratic thought,133 they bespoke, in the same measure, of  a natural social mechanism or instinct that transcended time and place, that was universally operable and ascribable equally to ‘future generations’ as much as to those of the present. They were/are, in that sense, always ‘common’ and everywhere present, even if the plea to ‘commonness’ would frequently arrive in the form of a demand for their moderation. Their function, however, has been to rationalize social relations, describe their operative mechanics and authorize sovereignty, all in a manner akin to the market – in which human life, qua interests, is the formal subject matter of processes of transaction and exchange. If then the ultimate telos of the regime was to turn, by some bewitching magic, something that was not capable of being owned into something that might become so (through its removal), so also it seemed to imagine that this was also the case with respect to the category of ‘humanity’ that it ushered into existence. Humanity comes to be expressed, ultimately, in a metaphorically commodified form of life identified in and through its relationship to the resources over which it seeks to have control. To be human is to partake of the ‘interests’ in the resources of the moon and other planetary bodies in which all are deemed to share. Just as outer space was a site in which the distinction between peace and war became blurred so as to make warfare itself an illegible part of the regime, so also we might observe, in this context, another similar construction. Here, the regime takes on the character of that which it seeks to prevent or avoid – a system of resource extraction and of primitive accumulation, through which every other relationship humankind might have with the outer space environment, and, indeed, with itself, comes to be mediated. As the instrumental object of a regime of management that has the ‘use’ of nature as its operative configuration, outer space becomes enmeshed within the one-dimensional dynamics of the total administrative state that was central to its formation and, with it, the very meaning of what it is to be human

#### Space also requires extensive ground-based injustices. Each launch platform is a place where indigenous populations must be made invisible. Those spaces mean everything to them biopolitically while in order to utilize them they are converted into a theoretical terra to be securitized for unjust private appropriation of space

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Reaching outer space requires Earthly infrastructure, which means that space launches have concrete footprints that change according to developments in launch technologies. The placement of outer space related infrastructure on Earth is a question of environmental (in)justice. Which sites are chosen, who is expropriated, and which environments are impacted is subject to strategic geopolitical calculations, which, more often than not, employ classical geopolitical reasoning (Hickman and Dolman 2002; Ingold 2006; Meira Filho, Guimarães Fortes, and Barcelos 2014; NDRI 2006). Launch sites are tightly controlled to reduce the risk of interference or failure, therefore situating launch sites in remote areas is often explained in terms of safety and security (Zapata and Murray 2008). No doubt this is important: rockets are composed of many tonnes of material and combustive fuel, so they must be launched in places where damage from routine as well as potentially catastrophic explosions can be contained. For humans to reach “the final frontier,” they must first find a frontier space on Earth that can be made into an empty space in which controlled explosions can be routine. Frontiers are seldom as empty as those aiming to conquer them would claim. Where they are not populated by people, they are filled with other sorts of meanings and life forms (Klinger 2017; Tsing 2005). Potential launch sites and testing ranges deemed by government authorities to be simultaneously remote, safe, and suitable to contain the risks of rocket launch must first be made empty of people, with prior land use regimes or territorial claims pushed beyond designated buffer zones (Gorman 2007; Mitchell 2017). Hence the placement of space infrastructure follows colonial geographies of extraction, sacrifice, and risk (Mitchell 2017; Redfield 2001). As Gorman (2007) put it: “because of their distance from the metropole, these places lend themselves to hosting prisons, detention camps, military installations, nuclear weapons, and nuclear waste. All of these establishments, including rocket ranges, have inspired reactions of protest.” These so-called 12 J. M. KLINGER ‘peripheral’ spaces are nevertheless central to their inhabitants and their neighbors, who question the logic of extraglobal conquest in the face of unresolved Earthly injustices.

#### I therefore stand resolved: The private appropriation of “Outer Space” is unjust through the analysis critical geopolitics.

## Part 3: “Space Ship Earth”

#### A critical geopolitics that recognizes Earth’s connectedness to the space environment is essential to recognize the biopolitical imperatives of real people and the ways those interactions and narratives inform the creating of systems of power that reproduce social relations in ways that uphold militarism, genocide and the ongoing exclusion of voices of dissent. By challenging existing notions of the expropriation of space we will not need to leave the rock in constant existential crisis. Creates a new ontology of space that ignores static definitions of human as accumulator and as contamination. Allows flexible space identity and justice. Discourse key to human survival.

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Critical geopolitics deconstructs the taken-for-granted ideas of outer space as organized according to state actors competing for control and hegemony (Dunnett 2016; Sage 2008, 2016). In this respect, Macdonald’s (2007) anti-astropolitik critiques the classical geopolitical strain of thought that recasts outer space as populated with strategically valued “objects for which powerful states may compete” (Dolman 2002, 138). Although the “anti-” approach to geopolitics has been critiqued for reifying the divide between state and society (Sharp 2011), its challenge to the narrow definition of state interests provokes broader imaginings on the diverse possibilities of human engagement with power (Koopman 2011), and with outer space (Parks and Schwoch 2012). These broader imaginings are not visible in classical geopolitical approaches to outer space. By contrast, the lens of critical geopolitics brings the neoliberalization of the state into focus (Dodds, Kuus, and Sharp 2013). Drawing on Foucault, this perspective treats the emergence of private space firms as consistent with neoliberal governance rather than as a break with the “tradition” of national space programs because the state is characterized a one of several assemblages of power that remake global geographies (Rowan 2017). Indeed, the rise of a private space sector must be accompanied “from start to finish” (Foucault 2010, 121) by people determined to facilitate the colonization of public institutions by the private sector, and who are in a position to marshal the power of the state to enforce this process. Environmental geopolitics grew up with critical geopolitics in the post-Cold War era in the Euro-American world. Environmental sciences were consolidating under the emergence of new satellite regimes, at the end of what Höhler (2015) described as the heyday of “Spaceship Earth” and the environmental age. The concept of spaceship earth was one of several popular global responses to the first photographs of Earth “from the outside,” depicting our planet as a delicate sphere hanging in space (Cosgrove 1994, 2003; Jasanoff 2004; Litfin 1997; Maher 2017). These images intersected with the Cold War surveillance apparatuses that shifted with the fall of the Berlin wall from enemy reconnaissance to environmental monitoring. Global environmental problems could provide “a new ordering principle” for post-Cold War intergovernmental relations in which states would cede some power to international agreements and supranational organizations to manage global environmental problems (Castree 2008, 423). Practice since then has been quite different, marking the persistence of classical geopolitical approaches to the environment even in the face of paradigm-shifting issues such as climate change (Dalby 2014). When environmental changes are framed as threats to which states must respond, and only powerful states respond to protect narrowly-defined national interests, environmental geopolitics are not at all synonymous with conservation or environmental justice. Summing up this state of affairs, Castree (2008) concluded: “currently dominant visions of the pattern of environmental geopolitics are a form of power-knowledge which help perpetuate global inequality and environmental degradation.” As insufficient action to mitigate climate change has become the norm for international politics, the US intelligence community has reframed the environment as an adversary (Brown and Pensack 2018), feeding a growing fatalism in policy and popular culture that Earth’s increasingly dangerous environments can no longer be managed, only eventually escaped (Zorthian 2017). Geographers critique this apocalyptic national security approach to anthropogenic environmental change for generating multiple forms of violence (Dalby 2002; Dodds and Pippard 2005; Peluso and Watts 2001). They contend that the environment is not merely something to which the security apparatus of the state must respond. Rather, the environment is actively remade by (in) action on the GEOPOLITICS 5 part of political and economic elites to reduce the environmental destruction and greenhouse gas emissions that are altering the planet (Dalby 2014). Smith’s (1990) thesis on the production of nature, from which environmental geopolitics drew insights, holds that nature is produced through human labor rather than pregiven. The use of outer space is enfolded in this dialectical relationship between geopolitics and the environment through power-laden practices that co-produce society and outer space (Beery 2011, 2016a; Dickens and Ormrod 2016; Dunnett et al. 2017). Indeed, the multibillion dollar investments in satellite instrumentation intended to generate greater “certainty” about a changing climate have been critiqued by scholars positing that a comparable investment in developing alternatives to fossil fuels would do much more social and environmental good (Litfin 1997). A critical attention to state and imperial power, as exercised through and in relation to the environment, distinguishes environmental geopolitics from classical geopolitical concerns with the maintenance and expansion of national power.

Critical geopolitics helps deconstruct the nationalist performativity of such endeavors by considering the political and economic value placed on the spectacle of spaceflight (Boczkowska 2017; Macdonald 2008, 2010; Sage 2016). Feminist geopolitics draws our attention to the racialized and gendered dispossession advanced by the state, through the construction of space infrastructure and exercised through access to land. The fact that environmental and public health impacts were only considered by the authorities after years of mobilization by Black social movements, religious communities, and scholars highlights the ways in which inattention to the local in the pursuit of space power perpetuates environmental injustice, which in turn interrupts national plans for space progress. The hyper-local politics of basic livelihood security shape long-term access to outer space and space geopolitics at multiple scales. Attending to the local matters is important, not just because it sheds light on broader geopolitical processes, but because failing to do so leaves the substantive matters of human engagement with outer space entirely overlooked, at best. At worst, ignoring local environmental conditions recasts them as places to be “left behind,” casualties in a Darwinian race to the cosmos in which the poor have no place. Attending to the environmental geopolitics of outer space on Earth shows the co-production of Earth and space. Earthly environments and social relations are remade in our evolving relationship with outer space and reconceived alongside evolving deliberations on the prospects for human survival.