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#### Settler colonialism is the permeating structure of the nation-state which requires the elimination of indigenous life and land via the occupation of settlers. The appropriation of land turns Natives into ghosts and chattel slaves into excess labor.

Tuck and Yang 12, (Eve Tuck, Unangax, State University of New York at New Paltz K. Wayne Yang University of California, San Diego, Decolonization is not a metaphor, Decolonization: Indigeneity, Education & Society Vol. 1, No. 1, 2012, pp. 1-40, JKS)

Our intention in this descriptive exercise is not be exhaustive, or even inarguable; instead, we wish to emphasize that (a) decolonization will take a different shape in each of these contexts - though they can overlap - and that (b) neither external nor internal colonialism adequately describe the form of colonialism which operates in the United States or other nation-states in which the colonizer comes to stay. Settler colonialism operates through internal/external colonial modes simultaneously because there is no spatial separation between metropole and colony. For example, in the United States, many Indigenous peoples have been forcibly removed from their homelands onto reservations, indentured, and abducted into state custody, signaling the form of colonization as simultaneously internal (via boarding schools and other biopolitical modes of control) and external (via uranium mining on Indigenous land in the US Southwest and oil extraction on Indigenous land in Alaska) with a frontier (the US military still nicknames all enemy territory “Indian Country”). The horizons of the settler colonial nation-state are total and require a mode of total appropriation of Indigenous life and land, rather than the selective expropriation of profit-producing fragments. Settler colonialism is different from other forms of colonialism in that settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain. Thus, relying solely on postcolonial literatures or theories of coloniality that ignore settler colonialism will not help to envision the shape that decolonization must take in settler colonial contexts. Within settler colonialism, the most important concern is land/water/air/subterranean earth (land, for shorthand, in this article.) Land is what is most valuable, contested, required. This is both because the settlers make Indigenous land their new home and source of capital, and also because the disruption of Indigenous relationships to land represents a profound epistemic, ontological, cosmological violence. This violence is not temporally contained in the arrival of the settler but is reasserted each day of occupation. This is why Patrick Wolfe (1999) emphasizes that settler colonialism is a structure and not an event. In the process of settler colonialism, land is remade into property and human relationships to land are restricted to the relationship of the owner to his property. Epistemological, ontological, and cosmological relationships to land are interred, indeed made pre-modern and backward. Made savage. In order for the settlers to make a place their home, they must destroy and disappear the Indigenous peoples that live there. Indigenous peoples are those who have creation stories, not colonization stories, about how we/they came to be in a particular place - indeed how we/they came to be a place. Our/their relationships to land comprise our/their epistemologies, ontologies, and cosmologies. For the settlers, Indigenous peoples are in the way and, in the destruction of Indigenous peoples, Indigenous communities, and over time and through law and policy, Indigenous peoples’ claims to land under settler regimes, land is recast as property and as a resource. Indigenous peoples must be erased, must be made into ghosts (Tuck and Ree, forthcoming). At the same time, settler colonialism involves the subjugation and forced labor of chattel slaves, whose bodies and lives become the property, and who are kept landless. Slavery in settler colonial contexts is distinct from other forms of indenture whereby excess labor is extracted from persons. First, chattels are commodities of labor and therefore it is the slave’s person that is the excess. Second, unlike workers who may aspire to own land, the slave’s very presence on the land is already an excess that must be dis-located. Thus, the slave is a desirable commodity but the person underneath is imprisonable, punishable, and murderable. The violence of keeping/killing the chattel slave makes them deathlike monsters in the settler imagination; they are reconfigured/disfigured as the threat, the razor’s edge of safety and terror. The settler, if known by his actions and how he justifies them, sees himself as holding dominion over the earth and its flora and fauna, as the anthropocentric normal, and as more developed, more human, more deserving than other groups or species. The settler is making a new "home" and that home is rooted in a homesteading worldview where the wild land and wild people were made for his benefit. He can only make his identity as a settler by making the land produce, and produce excessively, because "civilization" is defined as production in excess of the "natural" world (i.e. in excess of the sustainable production already present in the Indigenous world). In order for excess production, he needs excess labor, which he cannot provide himself. The chattel slave serves as that excess labor, labor that can never be paid because payment would have to be in the form of property (land). The settler's wealth is land, or a fungible version of it, and so payment for labor is impossible.6 The settler positions himself as both superior and normal; the settler is natural, whereas the Indigenous inhabitant and the chattel slave are unnatural, even supernatural. Settlers are not immigrants. Immigrants are beholden to the Indigenous laws and epistemologies of the lands they migrate to. Settlers become the law, supplanting Indigenous laws and epistemologies. Therefore, settler nations are not immigrant nations (See also A.J. Barker, 2009). Not unique, the United States, as a settler colonial nation-state, also operates as an empire - utilizing external forms and internal forms of colonization simultaneous to the settler colonial project. This means, and this is perplexing to some, that dispossessed people are brought onto seized Indigenous land through other colonial projects. Other colonial projects include enslavement, as discussed, but also military recruitment, low-wage and high-wage labor recruitment (such as agricultural workers and overseas-trained engineers), and displacement/migration (such as the coerced immigration from nations torn by U.S. wars or devastated by U.S. economic policy). In this set of settler colonial relations, colonial subjects who are displaced by external colonialism, as well as racialized and minoritized by internal colonialism, still occupy and settle stolen Indigenous land. Settlers are diverse, not just of white European descent, and include people of color, even from other colonial contexts. This tightly wound set of conditions and racialized, globalized relations exponentially complicates what is meant by decolonization, and by solidarity, against settler colonial forces.

#### The 1ac’s representations and discourses surrounding space appropriation perpetuates colonial violence through Western settler myths of terra nullius and prioritization of science over Indigenous epistemologies

Smiles 20, Deondre Smiles, 10-26-2020, "The Settler Logics of (Outer) Space," Society + Space, <https://www.societyandspace.org/articles/the-settler-logics-of-outer-space> [Dondre Smiles is an Indigenous geographer whose research interests lie at the intersection of several fields, including critical Indigenous geographies, human-environment interactions, political ecology, tribal cultural resource preservation, and science and technology studies. Their current academic position is as an Assistant Professor in the Department of Geography at the University of Victoria, in B.C., Canada.] //tanya

To most scholars, and certainly to the virtual majority of Indigenous peoples on Turtle Island, it is no secret that the country we call the United States of America was built upon the brutal subjugation of Indigenous people and Indigenous lands. Fueled by the American settler myths of terra nullius (no man’s land) and Manifest Destiny, the American settler state proceeded upon a project of cultural and physical genocide, with lasting effects that endure to the present day. The ‘settler myth’ permeates American culture. Words such as ‘pioneer’, the ‘West’, ‘Manifest Destiny’ grab the imagination as connected to the growth of the country in its early history. America sprang forth from a vast open ‘wilderness’. Of course, for Indigenous people, we know differently—these lands had complex cultural frameworks and political entities long before colonization. Words like ‘pioneer’ and ‘Manifest Destiny’, have deep meanings for us too, as they are indicative of the very real damage dealt against our cultures and nations, damage that we have had to work very hard to undo. Trump’s address raises key insights into the continuing logics of settler colonialism, as well as questions of its future trajectories. Trump’s invocation of ideas such as the ‘frontier’ and ‘taming the wilderness’ draws attention to the brutal violence that accompanied the building of the American state. Scholars such as Greg Grandin (2019) make the case that the frontier is part of what America is—whether it is the ‘Wild West’, or the U.S.-Mexican border, America is always contending with a frontier that must be defined.  Language surrounding ‘frontier’ is troubling because it perpetuates the rationale of why the American settler state even exists—it could make better use of the land than Native people would, after all, they lived in wilderness. This myth tells us that what we know as the modern world was built through the hard work of European settlers; Indigenous people had nothing to offer or contribute. For someone like Mr. Trump, whose misgivings and hostility towards Native people have been historically documented, this myth fits well with his narrative as President—he is building a ‘new’ America, one that will return to its place of power and influence. The fact that similar language is being used around the potential of American power being extended to space could reasonably be expected, given the economic and military potential that comes from such a move. Space represents yet another ‘unknown’ to be conquered and bent to America’s will. However, such interplanetary conquest does not exist solely in outer space. I wish to situate the very real colonial legacies and violence associated with the desire to explore space, tracing the ways that they are perpetuated and reified through their destructive engagements with Indigenous peoples. I argue that a scientific venture such as space exploration does not exist in a vacuum, but instead draws from settler colonialism and feeds back into it through the prioritization of ‘science’ over Indigenous epistemologies. I begin by exploring the ways that space exploration by the American settler state is situated within questions of hegemony, imperialism, and terra nullius, including a brief synopsis of the controversy surrounding the planned construction of the Thirty Meter Telescope on Mauna Kea. I conclude by exploring Indigenous engagement with ‘space’ in both its Earthbound and beyond-earth forms as it relates to outer space, and what implications this might have for the ways we think about our engagement with space as the American settler state begins to turn its gaze skyward once again. I position this essay alongside a growing body of academic work, as well as journalistic endeavors (Haskins, 2020; Koren, 2020) that demands that the American settler colonial state exercise self-reflexivity as to why it engages with outer space, and who is advantaged and disadvantaged here on Earth as a result of this engagement. Settler colonialism is commonly understood to be a form of colonialism that is based upon the permanent presence of colonists upon land. This is a distinction from forms of colonialism based upon resource extraction (Wolfe, 2006; Veracini, 2013). What this means is that the settler colony is intimately tied with the space within which it exists—it cannot exist or sustain itself without settler control over land and space. This permanent presence upon land by ‘settlers’ is usually at the expense of the Indigenous, or original people, in a given space or territory. To reiterate: control over space is paramount. As Wolfe states, “Land is life—or at least, land is necessary for life. Thus, contests for land can be—indeed, often are—contests for life” (2006: 387).  Without land, the settler state ‘dies’; conversely, deprivation of land from the indigenous population means that in settler logic, indigeneity dies (Povinelli, 2002; Wolfe, 2006.) Because of this overarching goal of space, there is an inherent anxiety in settler colonies about space, and how it can be occupied and subsequently rewritten to remove Indigenous presence. In Anglo settler colonies, this often takes place within a lens of conservation. Scholars such as Banivanua Mar (2010), Lannoy (2012), Wright (2014) and Tristan Ahtone (2019) have written extensively on the ways that settler reinscription of space can be extremely damaging to Indigenous people from a lens of ‘conservation’. However, dispossession of Indigenous space in favor of settler uses can also be tied to some of the most destructive forces of our time. For example, Aboriginal land in the Australian Outback was viewed as ‘empty’ land that was turned into weapons ranges where the British military tested nuclear weapons in the 1950s, which directly led to negative health effects upon Aboriginal communities downwind from the testing sites (Vincent, 2010). Indigenous nations in the United States have struggled with environmental damage related to military-industrial exploitation as well. But, what does this all look like in regard to outer space? In order to really understand the potential (settler) colonial logics of space exploration, we must go back and explore the ways in which space exploration became inextricably tied with questions of state hegemony and geopolitics during the Cold War. US and Soviet space programs were born partially out of military utility, and propaganda value—the ability to send a nuclear warhead across a great distance to strike the enemy via a ICBM and the accompanying geopolitical respect that came with such a capability was something that greatly appealed to the superpowers, and when the Soviets took an early lead in the ‘Space Race’ with Sputnik and their Luna probes, the United States poured money and resources into making up ground (Werth, 2004). The fear of not only falling behind the Soviets militarily as well as a perceived loss of prestige in the court of world opinion spurred the US onto a course of space exploration that led to the Apollo moon landings in the late 1960s and the early 70s (Werth, 2004; Cornish, 2019). I argue that this fits neatly into the American settler creation myth referenced by Trump—after ‘conquering’ a continent and bringing it under American dominion, why would the United States stop solely at ‘space’ on Earth? To return to Grandin (2019), space represented yet another frontier to be conquered and known by the settler colonial state; if not explicitly for the possibility of further settlement, then for the preservation of its existing spatial extent on Earth. However, scholars such as Alan Marshall (1995) have cautioned that newer logics of space exploration such as potential resource extraction tie in with existing military logics in a way that creates a new way of thinking about the ‘openness’ of outer space to the logics of empire, in what Marshall calls res nullius (1995: 51)[i]. But we cannot forget the concept of terra nullius and how our exploration of the stars has real effects on Indigenous landscapes here on Earth. We also cannot forget about forms of space exploration that may not be explicitly tied to military means. Doing so deprives us of another lens through which to view the tensions between settler and Indigenous views of space and to which end is useful. Indeed, even reinscribing of Indigenous space towards ‘peaceful’ settler space exploration have very real consequences for Indigenous sovereignty and Indigenous spaces. Perhaps the most prominent example of the fractures between settler space exploration and Indigenous peoples is the on-going controversy surrounding the construction of the Thirty Meter Telescope on Mauna Kea, on the island of Hawaii. While an extremely detailed description of the processes of construction on the TMT and the opposition presented to it by Native Hawai’ians and their allies is beyond the scope of this essay, and in fact is already expertly done by a number of scholars[ii], the controversy surrounding TMT is a prime example of the logics presented towards ‘space’ in both Earth-bound and beyond-Earth contexts by the settler colonial state as well as the violence that these logics place upon Indigenous spaces, such as Mauna Kea, which in particular already plays host to a number of telescopes and observatories (Witze, 2020). In particular, astronomers such as Chanda Prescod-Weinstein, Lucianne Walkowicz, and others have taken decisive action to push back against the idea that settler scientific advancement via space exploration should take precedence over Indigenous sovereignty in Earth-space. Prescod-Weinstein and Walkowicz, alongside Sarah Tuttle, Brian Nord and Hilding Neilson (2020) make clear that settler scientific pursuits such as building the TMT are simply new footnotes in a long history of colonial disrespect of Indigenous people and Indigenous spaces in the name of science, and that astronomy is not innocent of this disrespect. In fact, Native Hawai’ian scholars such as Iokepa Casumbal-Salazar strike at the heart of the professed neutrality of sciences like astronomy:  One scientist told me that astronomy is [as] a “benign science” because it is based on observation, and that it is universally beneficial because it offers “basic human knowledge” that everyone should know “like human anatomy.” Such a statement underscores the cultural bias within conventional notions of what constitutes the “human” and “knowledge.” In the absence of a critical self-reflection on this inherent ethnocentrism, the tacit claim to universal truth reproduces the cultural supremacy of Western science as self-evident. Here, the needs of astronomers for tall peaks in remote locations supplant the needs of Indigenous communities on whose ancestral territories these observatories are built (2017: 8). As Casumbal-Salazar and other scholars who have written about the TMT and the violence that has been done to Native Hawai’ians (such as police actions designed to dislodge blockades that prevented construction) as well as the potential violence to come such as the construction of the telescope have skillfully said, when it comes to the infringement upon Indigenous space by settler scientific endeavors tied to space exploration, there is no neutrality to be had—dispossession and violence are dispossession and violence, no matter the potential ‘good for humanity’ that might come about through these things. Such contestations over outer space and ethical engagement with previously unknown spaces will continue to happen. Outer space is not the first ‘final frontier’ (apologies to Gene Roddenberry) that has been discussed in settler logics and academic spaces. In terms of settler colonialism, scholars have written about how Antarctica was initially thought of as the ‘perfect’ settler colony—land that could be had without the messy business of pushing Indigenous people off of it (see Howkins 2010). Of course, we know now that engagement with Antarctica should be constrained by ecological concern—who is to say that these concerns will be heeded in ‘unpopulated’ space? What can be done to push back against these settler logics? I want to now turn our attention towards the possibilities that exist regarding Indigenous engagement with outer space.  After all, the timing could not be more urgent to do so—we are now at a point where after generations and generations of building the myth that America was built out of nothing, we are now ready to resume the project of extending the reach of American military and economic might in space. To be fair, there are plenty of advances that can be made scientifically with a renewed focus on space exploration. However, history shows us that space exploration has been historically tied to military hegemony, and there is nothing in Mr. Trump’s temperament or attitude towards a re-engagement with space that suggest that his push toward the stars will be anything different. A sustained conversation needs to be had—will this exploration be ethical and beneficial to all Americans?

#### **Their descriptions of space exploration and asteroid mining being inevitable (1ac ahadi 20) replicate the settler gaze that fetishizes the extraction of outer space and extends the subject-object relationship now and into the future**

Sammler and Lynch 19, Katherine G Sammler, Casey R Lynch, California State University Maritime, University Of Nevada, USA, 9-2-2021, "Apparatuses of observation and occupation: Settler colonialism and space science in Hawai'i," SAGE Journals, <https://journals.sagepub.com/doi/full/10.1177/02637758211042374> //tanya

While other imaginaries are possible (Sammler and Lynch, 2019), this paper demonstrates how Western space science projects are inextricably entangled in the imaginaries and practices of settler colonialism (Prescod-Weinstein, 2020; Smiles, 2020). We refer to offworld colonies not to reproduce this imaginary but to recognize that this is the project being carried out by both traditional public space agencies like NASA and emerging private space industries. The paper examines HI-SEAS and TMT to consider the complex imbrications between historical, ongoing, and projected future settler colonialism and ideologies 946 EPD: Society and Space 39(5) and practices of Western space science. HI-SEAS and TMT seemingly represent very different projects. While TMT defenders describe the telescope as a passive and innocuous piece of infrastructure used to produce “universal” knowledge, HI-SEAS presents a more active form of exploration towards offworld colonization. Yet, examining the two projects in relation, we show how both rely on logics of colonial totality (Matson and Nunn, 2017), the existing material relations of the colony, and the erasure of lived Native peoples and places (Hobart, 2019), while enacting distinct yet co-dependent subject positions key to the projection of settler colonialism across space and time. TMT and HI-SEAS, respectively, enact the disembodied god’s-eye-view of Enlightenment science and the idealized Enlightenment subject-body of the colonizer. While we are not the first to recognize the co-constitution of observation and occupation, by highlighting this relationship in TMT and HI-SEAS, we set up a critical dialog between Indigenous and anti-colonial critiques and interdisciplinary literature on social studies of outer space (SSOS). SSOS literature explores how socio-technical projects of visualization produce astronomical knowledge (Vertesi, 2015); how space agencies simulate Moon and Mars with earthly analogs (Olson, 2018) superimposing spaces onto one another (Messeri, 2016); and how offplanet activities reshape geopolitics, environmental politics, and resource economies (Dunnett et al., 2019; Klinger, 2021). Others examine space science infrastructures as projects of state-building, displacement, and development in colonial contexts (Mitchell, 2018;Redfield, 2002). While many of these authors recognize that offworld activities are within colonial imaginaries and practices, anti-colonial critiques are not often made explicit, focusing instead on the perspectives and actions of scientists and engineers (Messeri, 2016). In contrast, Indigenous and allied critical scholars offer analyses of spatial and temporal logics of settler colonialism as manifested through space science infrastructures and their related imaginaries (Maile, 2015; Matson and Nunn, 2017; Smiles, 2020). For TMT, scholars examine the multiple practices, logics, and institutions of Western space science that have worked to lay claim to Native Hawai’ian lands. Hobart (2019: 42), for instance, examines how TMT has been justified through narratives that reframe Maunakea within imaginaries of scientific progress in which the site “transcend[s] international politics in the name of the greater good of humanity” as part of a longer historical trajectory of discursively emptying or “deanimating” landscapes. Goodyear-Ka‘opua argues that settler tem- porality reserves modernity and futurity for colonial projects and relegates Indigeneity to a premodern past, but that TMT activists “enact Indigenous futurities and open space to transform present settler colonial conditions” (2017: 185). Casumbal-Salazar makes clear that TMT controversies cannot be understood without explicitly questioning settler colonialism, writing: How are we to understand the controversy over Mauna a Wakea and the TMT if we fail to identify or accept the context in which this battle is being waged; if we fail to critically analyze settler-colonization under U.S. occupation? (2017: 24) Unseating the purported universality and objectivity of space science projects requires categorical anti-colonial analyses. We argue that Barad’s (2007) theorization of the apparatus is useful for bridging SSOS and anti-colonial scholarship because it traces techno-scientific production as part of broader apparatuses extending spatially and temporally from what is traditionally understood as the sites and moments of scientific practice. Through the apparatus, we show how projects of scientific observation and colonial occupation are co-constituted through the Sammler and Lynch 947 production and maintenance of space science infrastructures on colonized lands. In turn, we consider how these infrastructures reproduce the subject–object relations key to settler colonial projects – the view-from-nowhere (or Archimedean point) and embodied colonizer subjectivities. Observation is never a passive enterprise; rather, observation-occupation is active and employs apparatuses to iteratively enact differences between subject and object, colonizer and colonized. Since Cook’s expeditions, the West has subjected the constellation of Pacific Islands to a multitude of science experiments (DeLoughrey, 2012; Farbotko, 2010). Salmond (2003: ix) explains how “[a]s the edges of the known world were pushed out, wild nature – including the ‘savages’ and ‘barbarians’ at the margins of humanity - was brought under the calm, controlling gaze of Enlightenment science, long before colonial domination was attempted.” 948 EPD: Society and Space 39(5) There is a long history of the liveliness of islands being abstracted by colonial powers and scientists alike, from seemingly innocuous use of the Gala´pagos as discrete microcosms for theorizing evolution (Matsuda, 2006); to the United States’ devastating testing of nuclear weapons on the Marshall Islands; to botany’s role in the colonization of Hawai’i and its extension into contemporary experiments with genetically-modified organisms replacing native plant species (Goldberg-Hiller and Silva, 2015). As with other landscapes, specific imaginaries of place play a unique role in colonial practices on islands. Continental views of islands align with Enlightenment scientific desire for blank slates, perfect laboratories (Greenhough, 2006; Matsuda, 2007). Mobilizing imaginaries of frontier and isolation, representations of islands within a continental and colonial gaze are, as Matsuda explains, “distant, isolated, uninhabited, and abstract spaces” (2007: 230). The purported distance of the island colony enacts a separation between colonizer and colonized landscape that allows for specific relations and forms of observation. Islands become simplified models of a complex world, acting as “quintessential sites for experimentation” (Baldacchino, 2007: 165) based on fetishized assumptions about island spatiality. Scientists use islands to isolate variables and substitute space for time to construct linear timestreams. Islandness functions as stand-in for a computational time-step within an experimental design. These purported blank slates endow the initial time-step essential to modelling. Islands and their peoples have been employed to examine theories of geological, biological, human, and socio-cultural evolution. DeLoughrey describes how island spatiality is considered bound by “the theme of isolation, a model that had been deployed in the 19th century to propose the theory of evolution, and which re-energized the longstanding colonial understanding of the island as a laboratory” (2012: 168). The expansion of U.S. empire specifically enrolled island colonies from Puerto Rico to the Philippines as sites for grisly experimentations, from weapons to biomedical research on non-white bodies who were seen as relics of earlier stages of evolution (Immerwahr, 2019). Just as islands and their peoples have been used to model past evolutions, they are also established as models for specific futures. Baldacchino describes islands as sites of novelty; they tend toward clairvoyance; they are disposed to act as advance indicators or extreme reproductions of what is present or future elsewhere ... with fallacious simplicity, [they] can be conceived as a convenient platform for any whim or fancy. (2007: 165) Islands have emplaced visions of future climate dystopias (Farbotko, 2010) and imagined libertarian capitalist utopias (Lynch, 2017). The continuation of these projects of empire and white supremacy are shaping plans for human colonization of Moon and Mars. Such projects re-articulate debates around questions of race, ability, eugenics, reproduction, and human psychology in journals like Futures – including a 2019 special issue on ethics in offworld colonization. Through these projects, islands and peoples are erased and overwritten by the totality of the model world they represent. As DeLoughrey explains, “Western colonizers had long configured tropical islands into the contained spaces of a laboratory, which is to say a suppression of island history and Indigenous presence” (2012: 172). An affective landscape of history, more-than-human relationality (Watts, 2013), and lived social place gets transformed into independent, sterile variables instrumentalized in the projection of specific futures. Such discourses intersect with space science imaginaries of exploration, exoticism, and otherworldliness. Allen examines how U.S. empire depends upon three notions of time: a romanticized historical time recounting myth of the nation’s founding, the geological time of natural history, and the mechanized time of the clock and apparatuses of measurement. The organization and control over these three temporalities constitutes a colonial totality (Matson and Nunn, 2017) that works to settle time as much as space in the projection of settler futures. In dominant discourses, Indigenous time is linked to the past, with the present constituted on assimilation and the future on complete erasure (Rifkin, 2017). The existence of contemporary Indigenous peoples poses a challenge to ongoing settler colonial hegemony. Goodyear-Ka‘opua explains how “settler state officials cast the kia ʻi [land protectors, caretakers] as impediments on the road to ‘progress’ (aka settler futurity) ... (mis)representing us as fixed in place, pinned in a remote time” (2017: 191–192). Enlightenment notions of universality erase difference and thus Indigenous claims to prior rights or sovereignty. While these conceptions of time have long been critiqued, they continue to shape the central logics of contemporary Western science, including space science. While notions of linear, progressive time are used to justify settler colonial projects, the relative and contingent relationships among space, time, and matter complicate claims to universality. Time, like space, is subject to practices of organization and control that produce subject–object relations key to the Western colonial project. For instance, geologic time, or what Allen refers to as “vertical time,” is the spatial-temporal imaginary of geologic strata. He describes that, while “history often depicted time advancing horizontally across space, the geological revolution made it possible to imagine time extending perpendicularly into the territory beneath the nation” (Allen, 2008: 165). The deep time of geology historicizes Western civilization as the top layer, the apex of natural history, and thus stands to justify colonialism and its civilizational projects. The exploration of cosmological time in the space sciences extends the colonial project further into the far expanses of the future and the totality of the universe. In Barad’s deconstructive reading of Enlightenment science, linear time and evacuated space are both the product of active material processes through which a purportedly universal “Man” continually enacts a separation between himself and the universe. It is this supposed separation from the rest of existence that constitutes “Man” as the subject of a masculinist science and the remainder of the universe as the object of his will. Practices of scientific observation and colonial occupation work in tandem to re-enact and reinforce this fundamental subject–object relationship. Critical scholars of science have long argued against the purported passivity of observation, from critiques of the Archimedean point (Yaqoob, 2014) to feminist theories of the embodied and situated nature of knowledge production (Haraway, 1988). Yet, beyond simply noting the ontological impossibility of Man’s separation from the universe, Barad theorizes an emergent and contingent form of separability – what she calls agential separability – that is (re)produced through the material practices of apparatuses. Barad explains that “apparatuses enact agential cuts that produce determinate boundaries and properties of entities within phenomena” (2007: 148). Apparatuses determine what comes to matter and how, thus producing differences between Sammler and Lynch 951 subject and object, which are not stable positions but rather enacted and contingent forms of relationality. We employ the apparatus to explore how subject–object relations of Western colonial science are not universal and absolute, but rather enacted through material practices that selectively produce the privileged subject positions on which settler colonialism and space science both depend. Ontologically, apparatuses produce spatial, temporal, and material relations that constitute projects of Western colonial science. This approach helps elaborate arguments like those of Matson and Nunn that “even the most futuristic space telescopes have embedded within them a lineage of Euro-western cultural supremacy” (2017: n.p.). This is not to simply claim that telescopes are in some way symbolic of settler colonial relations, but to recognize how space science apparatuses actively orient relations of observation and materialize settler colonial relations. Both TMT and HI-SEAS constitute apparatuses that extend spatially well beyond the infrastructural footprint on these mountains, to the island and surrounding ocean, into the atmosphere, to Moon, Mars, and cosmos. As part of these apparatuses, mountain environments of Hawaii become both a gateway to the cosmos and simulation of an alien landscape. Temporally, the apparatus stretches beyond contemporary scientific practices, drawing on longstanding histories of European imperialism, Western law, and settler colonial logics, and projecting these ideologies into offworld futures. Materially, these projects enroll technological, logistical, and physical systems, including roads, mirrors and lenses, sensors and surveillance devices, electromagnetic waves and domes, the geology of the Hawaiian landscape, and bodies of observer and observed.

#### The 1AC’s call to condemn the doctrine of private appropriation is a call to recenter the settler public as the legitimate and rightful owners of space and place.

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By Force of Expectation: Colonization, Public Lands, and the Property Relation

Over the course of the long nineteenth century, land policy was increasingly deployed as a means of encouraging western settlement, while also being symptomatic of the tensions among federal administration, private speculators, and extra-legal settler encroachment.13 As is often noted in scholarship on the public domain—but infrequently emphasized in discussions of the United States more generally—almost one-third of all land in the United States is administered by the federal government. This land is disproportionately concentrated in the western states, with federal acreage totaling nearly 80 percent of Nevada, 63 percent of Utah, and 53 percent of Oregon.14 Considered a revenue source for federal war debt during the early national era, public land policy operated initially to survey, secure, and dispose collateral in the service of national solvency in accordance with the Land Ordinance of 1785.15 Enormous giveaways and preferential lease arrangements for railroad corporations and extractive industries accompanied the aftermath of the Civil War. The Taylor Grazing Act of 1934 inaugurated a new era in federal management of public lands by instituting grazing fees for use of the public domain and effectively ending homesteading.16 In 1976, the Federal Land Policy and Management Act mandated multiple-use standards—including environmental protections aligned with the 1969 National Environmental Policy Act—that continue to govern Bureau of Land Management oversight.17 It was in the context of increased federal management and conservationist legislation that ranchers such as the Bundys increasingly cast themselves as victims of government overreach, as the true embodiment of the American people oppressed by governmental tyranny. Moreover, as has been the case in other settler uprisings in the west, the Bundys displayed no interest whatsoever in the actual and still-present Native peoples whose land they occupied as anything other than a historical metaphor for contemporary white injury. As Ryan Bundy remarked during the 2016 occupation of the Malheur National Wildlife Refuge in Oregon, the militia “recognize that the Native Americans had the claim to the land . . . but they lost that claim. . . . There are things to learn from cultures of the past, but the current culture is the most important.”18 In fact, a variety of claims to land are made in the name of “the public” and “the people” as a collective interest in opposition to the federal government, the extractive industries, or the supposedly special interests of Native American tribes.19 Here, generalized claims to representing “the public” and “the people” obscure the particular and often antagonistic positions that galvanize such claims, as well as casting tribes as a single interest group that fraudulently make claims in the name of sovereignty and treaty rights. The spectrum of debate on public lands today tends to naturalize the white nationalism espoused by the Bundys—even when ostensibly criticizing the occupations as extremist or without merit—by recourse to conceptions of the national public and natural resources as national commons.20 The notion of the commons itself is a logic of apparent universal access and public good that is used to justify indigenous dispossession, depicting the particular and historical belonging of Native peoples as an overly self-interested obstacle to the greater good of the commons. At the same time, recourse to an exceptionalist discourse that casts public lands as “the common birthright of all Americans” has become a frequent rejoinder to either plans for the large-scale transfer of federal lands to states and private industry. For instance, Utah Congressman Jason Chaffetz’s proposed Disposal of Excess Federal Lands Act in January 2017 was abruptly withdrawn after criticism from groups such as Backcountry Hunters and Anglers proclaimed: “It seems the politicians on Capitol Hill have forgotten to whom the land actually belongs. You, me and every other citizen of this country.”21 The substance of the bill echoed both Utah’s 2012 Transfer of Public Lands Act (which demanded that the U.S. Congress convey federal public lands to the state) and the 2016 Republican Party campaign platform (which likewise called for the devolution of public lands to states), even as it remained out of step with public statements by Donald Trump and Montana representative Ryan Zinke, then Trump’s likely nominee on his way to becoming the Secretary of the Interior, who sought to maintain federal control while increasing deregulation to allow for expanded access for private industry.22 Yet both proponents of the populist “to whom the land actually belongs” and legislators espouse a defensive nationalism and incontrovertible possession contingent upon the presumed comprehensive dispossession of indigenous peoples.

#### The alternative is to refuse the research project of the affirmative – this is a generative event that creates space for alternative modalities of knowing around outer space and insists upon the interrogation of the epistemological underpinnings of the 1ac.

Tuck and Yang 14 – associate professor of critical race and indigenous studies at the Ontario Institute for Studies in Education at the University of Toronto and director of ethnic studies at UC San Diego Eve Tuck and Wayne C Yang, “R-Words: Refusing Research,” Humanizing research: Decolonizing qualitative inquiry with youth and communities, vol 223 pp 239 – 243 [https://townsendgroups.berkeley.edu/sites/default/files/tuckandyangrwords\_refusingresearch.pdf //](https://townsendgroups.berkeley.edu/sites/default/files/tuckandyangrwords_refusingresearch.pdf%20//) sam

For the purposes of our discussion, the most important insight to draw from Simpson’s article is her emphasis that refusals are not subtractive, but are theoretically generative (p. 78), expansive. Refusal is not just a “no,” but a redirection to ideas otherwise unacknowledged or unquestioned. Unlike a settler colonial configuration of knowledge that is petulantly exasperated and resentful of limits, a methodology of refusal regards limits on knowledge as productive, as indeed a good thing. To explore how refusal and the installation of limits on settler colonial knowledge might be productive, we make a brief detour to the Erased Lynching series (2002–2011) by Los Angeles–based artist Ken Gonzales-Day (see Figure 12.1). Gonzales-Day researched lynching in California and the Southwest and found that the majority of lynch victims were Latinos, American Indians, and Asians. Like lynchings in the South, lynchings in California were events of public spectacle, often attended by hundreds, sometimes thousands of festive onlookers. At the lynchings, professional photographers took hours to set up portable studios similar to those used at carnivals; they sold their images frequently as postcards, mementos of public torture and execution to be circulated by U.S. post through- out the nation and the world. Lynching, we must be reminded, was extralegal, yet nearly always required the complicity of law enforcement—either by marshals or sheriffs in the act itself, or by judges and courts in not bothering to prosecute the lynch mob afterward. The photographs immortalize the murder beyond the time and place of the lynching, and in their proliferation, expand a single murder to the general murderability of the non-White body. In this respect, the image of the hanged, mutilated body itself serves a critical function in the maintenance of White supremacy and the spread of racial terror beyond the lynching. The spectacle of the lynching is the medium of terror. Gonzales-Day’s Erased Lynching series reintroduces the photographs of lynching to a contemporary audience, with one critical intervention: The ropes and the lynch victim have been removed from the images. Per Gonzales-Day’s website (n.d.), the series enacted a conceptual gesture intended to direct the viewer’s attention, not upon the lifeless body of the lynch victim, but upon the mechanisms of lynching themselves: the crowd, the spectacle, the photographer, and even consider the impact of flash photography upon this dismal past. The perpetrators, if present, remain fully visible, jeering, laughing, or pulling at the air in a deadly pantomime. As such, this series strives to make the invisible visible. The Erased Lynching series yields another context in which we might consider what a social scientist’s refusal stance might comprise. Though indeed centering on the erasure of the former object, refusal need not be thought of as a subtractive methodology. Refusal prompts analysis of the festive spectators regularly backgrounded in favor of wounded bodies, strange fruit, interesting scars. Refusal shifts the gaze from the violated body to the violating instruments—in this case, the lynch mob, which does not disappear when the lynching is over, but continues to live, accumulating land and wealth through the extermination and subordination of the Other. Thus, refusal helps move us from thinking of violence as an event and toward an analysis of it as a structure. Gonzales-Day might have decided to reproduce and redistribute the images as postcards, which, by way of showing up in mundane spaces, might have effectively inspired reflection on the spectacle of violence and media of terror. However, in removing the body and the ropes, he installed limits on what the audience can access, and redirected our gaze to the bodies of those who were there to see a murder take place, and to the empty space beneath the branches. Gonzales-Day introduced a new representational territory, one that refuses to play by the rules of the settler colonial gaze, and one that refuses to satisfy the morbid curiosity derived from settler colonialism’s preoccupation with pain. Refusals are needed for narratives and images arising in social science research that rehumiliate when circulated, but also when, in Simpson’s words, “the representation would bite all of us and compromise the representational territory that we have gained for ourselves in the past 100 years” (p. 78). As researcher-narrator, Simpson tells us, “I reached my own limit when the data would not contribute to our sovereignty or complicate the deeply simplified, atrophied representations of Iroquois and other Indigenous peoples that they have been mired within anthropologically” (p. 78). Here Simpson makes clear the ways in which research is not the intervention that is needed—that is, the interventions of furthering sovereignty or countering misrepresentations of Native people as anthropological objects. Considering Erased Lynchings dialogically with On Ethnographic Refusal, we can see how refusal is not a prohibition but a generative form. First, refusal turns the gaze back upon power, specifically the colonial modalities of knowing persons as bodies to be differentially counted, violated, saved, and put to work. It makes transparent the metanarrative of knowledge production—its spectatorship for pain and its preoccupation for documenting and ruling over racial difference. Thus, refusal to be made meaningful first and foremost is grounded in a critique of settler colonialism, its construction of Whiteness, and its regimes of representation. Second, refusal generates, expands, champions representational territories that colonial knowledge endeavors to settle, enclose, domesticate. Simpson complicates the portrayals of Iroquois, without resorting to portrayals of anthropo- logical Indians. Gonzales-Day portrays the violations without reportraying the victimizations. Third, refusal is a critical intervention into research and its circular self-defining ethics. The ethical justification for research is defensive and self-encircling—its apparent self-criticism serves to expand its own rights to know, and to defend its violations in the name of “good science.” Refusal challenges the individualizing discourse of IRB consent and “good science” by high- lighting the problems of collective harm, of representational harm, and of knowledge colonization. Fourth, refusal itself could be developed into both method and theory. Simpson presents refusal on the part of the researcher as a type of calculus ethnography. Gonzales-Day deploys refusal as a mode of representation. Simpson theorizes refusal by the Kahnawake Nation as anticolonial, and rooted in the desire for possibilities outside of colonial logics, not as a reactive stance. This final point about refusal connects our conversation back to desire as a counterlogic to settler colonial knowledge.

#### The role of the ballot is to center indigenous scholarship and resistance-- Any ethical commitment requires that the aff place themselves in the center of Native scholarship and demands.

Carlson 16 (Elizabeth Carlson, PhD, is an Aamitigoozhi, Wemistigosi, and Wasicu (settler Canadian and American), whose Swedish, Saami, German, Scots-Irish, and English ancestors have settled on lands of the Anishinaabe and Omaha Nations which were unethically obtained by the US government. Elizabeth lives on Treaty 1 territory, the traditional lands of the Anishinaabe, Nehiyawak, Dakota, Nakota, and Red River Metis peoples currently occupied by the city of Winnipeg, the province of Manitoba, (2016): Anti-colonial methodologies and practices for settler colonial studies, Settler Colonial Studies, DOI: 10.1080/2201473X.2016.1241213, JKS

Arlo Kempf says that ‘where anticolonialism is a tool used to invoke resistance for the colonized, it is a tool used to invoke accountability for the colonizer’.42 Relational accountability should be a cornerstone of settler colonial studies. I believe settler colonial studies and scholars should ethically and overtly place themselves in relationship to the centuries of Indigenous oral, and later academic scholarship that conceptualizes and resists settler colonialism without necessarily using the term: SCT may be revelatory to many settler scholars, but Indigenous people have been speaking for a long time about colonial continuities based on their lived experiences. Some SCTs have sought to connect with these discussions and to foreground Indigenous resistance, survival and agency. Others, however, seem to use SCT as a pathway to explain the colonial encounter without engaging with Indigenous people and experiences – either on the grounds that this structural analysis already conceptually explains Indigenous experience, or because Indigenous resistance is rendered invisible.43 Ethical settler colonial theory (SCT) would recognize the foundational role Indigenous scholarship has in critiques of settler colonialism. It would acknowledge the limitations of settler scholars in articulating settler colonialism without dialogue with Indigenous peoples, and take as its norm making this dialogue evident. In my view, it is critical that we not view settler colonial studies as a new or unique field being established, which would enact a discovery narrative and contribute to Indigenous erasure, but rather take a longer and broader view. Indigenous oral and academic scholars are indeed the originators of this work. This space is not empty. Of course, powerful forces of socialization and discipline impact scholars in the academy. There is much pressure to claim unique space, to establish a name for ourselves, and to make academic discoveries. I am suggesting that settler colonial studies and anti-colonial scholars resist these hegemonic pressures and maintain a higher anti-colonial ethic. As has been argued, ‘the theory itself places ethical demands on us as settlers, including the demand that we actively refuse its potential to re-empower our own academic voices and to marginalize Indigenous resistance’.44 As settler scholars, we can reposition our work relationally and contextually with humi- lity and accountability. We can centre Indigenous resistance, knowledges, and scholarship in our work, and contextualize our work in Indigenous sovereignty. We can view oral Indigenous scholarship as legitimate scholarly sources. We can acknowledge explicitly and often the Indigenous traditions of resistance and scholarship that have taught us and pro- vided the foundations for our work. If our work has no foundation of Indigenous scholarship and mentorship, I believe our contributions to settler colonial studies are even more deeply problematic.

# case

## framing

#### Their extinction first args are bad

#### 1] Risk of extinction focus paralyzes action – any action has a risk of causing extinction but so does not acting

#### 2] This assumes we don’t know what’s ethically bad but we don’t need more time to morally figure out that structural violence like racism is wrong – if there’s a high risk of that vote NEG

#### 3] This is another link – it justifies the 1% risk cheney doctrine of intervening in the middle east for a false threat, which was a worse political solution and caused massive suffering – this is the exact fear based politics that all of the K criticizes

#### 4] Value to life outweighs – we can’t experience ethical value in the first place if people are structurally excluded by the calculative thought of security – answers khan

#### Sus and hadeed doesn’t justify extinction o/ws – independently literally says we need to challenge assumptions to overcome biases which they obv don’t by advocating indg epistemological erasure

#### Burns assumes rational utilitarian ways of calculating body count but that calculative thought is impossible – state actors aren’t purely rational decision making machines – they’re influenced by subjective standpoints and doesn’t take into account that literal genocide is happening rn

#### Fear of extinction is a settler paradox where settler colonialism continues to imagine its end in order to sustain itself and live on the edge of death.

Dalley, 18—Assistant Professor of English at Daemen College (Hamish, “The deaths of settler colonialism: extinction as a metaphor of decolonization in contemporary settler literature,” Settler Colonial Studies, 8:1, 30-46, dml)

In this way, these settler-colonial narratives of extinction begin as a contemplation of endings and end as a way for settlers to persist. As in the classical solution to the settler-colonial paradox of origins, the native must be invoked and disavowed, and ultimately absorbed into the settler-colonial body as a means of accessing true belonging and the possibility of an authentic future in place. Veracini’s description of the settler-colonial historical imagination thus applies, in modified but no less appropriate form, to visions of futurity haunted by the possibility of death: Settler colonial themes include the perception of an impending catastrophe that prompts permanent displacement, the tension between tradition and adaptation and between sedentarism and nomadism, the transformative permanent shift to a new locale, the prospect of a safe ‘new land’, and the familial reproductive unit that moves as one and finally settles an arcadia that is conveniently empty.67 And yet that parallel means that it is not entirely true to say that settlers cannot contemplate a future without themselves, or that they lack the metaphorical resources to imagine their own demise. It is in fact characteristic of settler consciousness to continually imagine the end. But it does so through a paradox that echoes the ambivalence of Freud’s death drive: it is a fantasy of extinction that tips over into its opposite and becomes a method of symbolic preservation, a technique for delaying the end, for living on in the contemplation of death.68 The settler desire for death conceals that wish – the hope that, between the thought of the end and the act, someone will intervene, something will happen to show that it is not really necessary, that the settlers can stay, that they have value and can go on living. In this way, they make their own redemption, an extinction that is an act of self-preservation, deferring the hard reckoning we know we lack the courage to face, and avoid making the real changes – material, political, constitutional, practical – that might alter our condition of being and set us on the path to a real home in the world. We dream instead of ends, imagining worlds without us, thinking of what it would be like not to be. But at every moment we know that that the dream is nothing but a dream; we know we will awake and still be here, unchanged, unchanging, living on, forever. Thus settlers persist even beyond the moment of extinction they thought they wanted to arrive.

## adv

#### ahadi doesn’t say private

#### Howe isn’t about commercial mining

#### Public sector thumps mining – turns all internal links

NASA 19 [“NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids,” NASA, June 11, 2019, <https://www.nasa.gov/press-release/nasa-invests-in-tech-concepts-aimed-at-exploring-lunar-craters-mining-asteroids>] TDI

NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids Robotically surveying lunar craters in record time and mining resources in space could help NASA establish a sustained human presence at the Moon – part of the agency’s broader [Moon to Mars exploration](https://www.nasa.gov/specials/moon2mars/) approach. Two mission concepts to explore these capabilities have been selected as the first-ever Phase III studies within the [NASA Innovative Advanced Concepts](https://www.nasa.gov/niac) (NIAC) program. “We are pursuing new technologies across our development portfolio that could help make deep space exploration more Earth-independent by utilizing resources on the Moon and beyond,” said Jim Reuter, associate administrator of NASA’s Space Technology Mission Directorate. “These NIAC Phase III selections are a component of that forward-looking research and we hope new insights will help us achieve more firsts in space.” The Phase III proposals outline an aerospace architecture, including a mission concept, that is innovative and could change what’s possible in space. Each selection will receive as much as $2 million. Over the course of two years, researchers will refine the concept design and explore aspects of implementing the new technology. The inaugural Phase III selections are: Robotic Technologies Enabling the Exploration of Lunar Pits William Whittaker, Carnegie Mellon University, Pittsburgh This mission concept, called Skylight, proposes technologies to rapidly survey and model lunar craters. This mission would use high-resolution images to create 3D model of craters. The data would be used to determine whether a crater can be explored by human or robotic missions. The information could also be used to characterize ice on the Moon, a crucial capability for the sustained surface operations of NASA’s Artemis program. On Earth, the technology could be used to autonomously monitor mines and quarries. [Mini Bee Prototype to Demonstrate the Apis Mission Architecture and Optical Mining Technology](https://www.nasa.gov/directorates/spacetech/niac/2019_Phase_I_Phase_II/Mini_Bee_Prototype). Joel Sercel, TransAstra Corporation, Lake View Terrace, California  This flight demonstration mission concept proposes a method of asteroid resource harvesting called optical mining. Optical mining is an approach for excavating an asteroid and extracting water and other volatiles into an inflatable bag. Called Mini Bee, the mission concept aims to prove optical mining, in conjunction with other innovative spacecraft systems, can be used to obtain propellant in space. The proposed architecture includes resource prospecting, extraction and delivery.

#### Also thumps deflection

Chow 21, Denise Chow, 11-23-2021, "NASA launches first mission to test asteroid deflection," NBC News, <https://www.nbcnews.com/science/space/nasa-launch-first-ever-mission-test-asteroid-deflection-rcna5698> //tanya

If an asteroid is hurtling toward Earth, can humanity be saved not with a bang, but with a nudge? NASA is poised to investigate just that with a [first-of-its-kind mission to deflect an asteroid](https://www.nbcnews.com/science/space/nasa-s-dart-mission-will-redirect-near-earth-asteroid-scientists-n1281040) by intentionally crashing a spacecraft into it. The mission offers a rare, real-world chance to test a planetary defense strategy that could protect Earth from a potentially catastrophic collision in the future. The $325 million [DART mission](https://www.nasa.gov/specials/pdco/index.html#dart), short for Double Asteroid Redirection Test, launched Wednesday at 1:21 a.m. ET from Vandenberg Space Force Base in California. The probe will spend almost a year journeying to an asteroid system more than 6.5 million miles away from Earth. The mission's target is Dimorphos, a space rock measuring 525 feet across that orbits a much larger asteroid named Didymos, which measures around 2,500 feet across. Neither Dimorphos nor Didymos pose a threat to the planet, according to NASA, but the system is a "perfect testing ground" for whether crashing a spacecraft into an asteroid can effectively change its motion in space. Next fall, NASA will [smash the DART spacecraft into Dimorphos](https://www.nbcnews.com/now/video/nasa-mission-will-crash-craft-to-redirect-asteroid-123042885605) at a speed of around 15,000 mph. Telescopes on Earth have been studying Didymos and its "moonlet" Dimorphos for decades, and have observed that the smaller space rock circles its larger counterpart once every 11 hours and 55 minutes, said Nancy Chabot, a planetary scientist at the Johns Hopkins University Applied Physics Laboratory and the mission's coordination lead. Chabot and her colleagues want to see if the cosmic collision can alter Dimorphos' nearly 12-hour orbit. The agency’s Planetary Defense Coordination Office is tasked with searching for near-Earth objects that are potentially hazardous to the planet, including those that venture within 5 million miles of Earth’s orbit, and objects large enough to cause significant damage if they hit the surface. If in the future a large space rock is found on a collision course with Earth, tests like the DART mission could help NASA respond to the threat.

#### No Astro-terror – no one will use deflection technology.

Wall 11 Mike Wall 11-4-2011 “Why Asteroids Make Lousy Space Weapons” <https://www.space.com/13515-asteroid-deflection-space-weapons.html> (Ph.D. in evolutionary biology from the University of Sydney, Australia)//Elmer

If you lie awake at night worrying about some supervillain steering giant asteroids toward your hometown, you really should relax, experts say. It's not going to happen anytime soon. Humanity does indeed have the technical skills to move space rocks around, and we may employ this know-how at some point to avoid a catastrophic impact like the one that killed the dinosaurs 65 million years ago. But the odds of any rogue state using asteroids to rain death down on its enemies are minuscule, experts say. "It's a lousy weapon," said former astronaut Rusty Schweickart, chairman of the B612 Foundation, a group dedicated to predicting and preventing cataclysmic asteroid impacts on Earth. "You get a chance to use one once every several hundred years," Schweickart said during a recent panel discussion called "Moving an Asteroid" at the California Institute of Technology in Pasadena. "And even then, you can only deflect it to hit someplace along a sort of arbitrary line across the Earth." [Top 10 Space Weapons] Serious spaceflight skills Changing the orbit of a massive asteroid hurtling through deep space sounds like a daunting task, but our species knows how to do it. For example, we could launch a spacecraft that would rendezvous with an asteroid, then travel alongside it for months or years. Over time, the probe's modest gravity would tug on the space rock, pulling it into a different orbit, Schweickart said. Given enough time to act, this so-called "gravity tractor" method could work in quite precise and predictable ways. And we've demonstrated the skills necessary to make it happen. Multiple missions have met up with asteroids in deep space. For example, NASA's Dawn spacecraft is currently in orbit around Vesta, the second-largest object in the main asteroid belt between Mars and Jupiter. And in 2005, Japan's Hayabusa probe rendezvoused with a space rock called Itokawa. The craft even scraped some samples off Itokawa and sent them back to Earth for analysis. It's a good thing we possess these potential asteroid-moving skills, Schweickart said, for they may save our bacon someday. Earth has been pummeled by many dangerous asteroids throughout its history, and there's no reason to think the barrage will stop in the future. Space rocks big enough to cause major damage and disruption to the global economy and society (were they to strike a populated area today) have hit Earth, on average, every 200 or 300 years, Schweickart said. Firing a weapon once every 300 years That bombardment rate is scarily frequent to anyone worried about the long-term survival of human civilization. But it's not nearly frequent enough to make asteroids good weapons of mass destruction, according to Schweickart. [5 Reasons to Care About Asteroids] "You're going to have an opportunity once every two or three hundred years to go up and have a weapon to hit Baghdad," Schweickart said. "Of course, the problem is that by that time, the Zambian space program is the world's premier space program, and Baghdad is a buddy of yours." Potential asteroid wranglers also wouldn't be able to direct a space rock just anywhere on Earth, he added. For the foreseeable future, we'll be able only to speed up or slow down an asteroid, moving it in an "east-west" direction along its trajectory. Moving it in the "north-south" plane is not an option. "If you do anything other than speed up or slow down the asteroid, it has almost no effect," Schweickart said. "You've got to go along that line; it's the only way physics lets you do it." So anyone wishing to asteroid-bomb the United States would have to manipulate a space rock whose trajectory already crossed American territory. The trick would be tweaking its velocity enough to ensure an impact on American soil. In practice, therefore, the wait for a suitable asteroid weapon could be considerably longer than 200 or 300 years. Protecting Earth Schweickart and other panelists argued that humanity will need to deflect a killer asteroid away from Earth someday. It would be a shame, they said, if unfounded fears about possible nefarious uses of asteroid-moving technology impeded its development. "The public perception of asteroids can be pretty scary," Schweickart said. "There's going to be a lot of scare stuff. It's already out there, it's going to get worse and that is going to be a very serious challenge that we on the technical side will have to deal with." People worried about death from above should focus their anxiety elsewhere, fellow panelist Bill Nye said. There are plenty of much more viable space weapons than asteroids already up there. "Space is already pretty weaponized," said Nye, executive director of the Planetary Society and former host of the science-themed TV show "Bill Nye the Science Guy." "The global positioning system that we all know and love was designed to guide weapons. So using an asteroid as a weapon is sort of coming late to the party."

#### Mares is another link – it presumes “this tech might be wielded by private companies” but justifies the state doing it

#### Lovett is about using nukes and getting hit by asteroids which are all alt causes that the gov does – we’ll read blue

Lovett 19, [Richard Lovett is a Cosmos contributor, The biggest danger about an asteroid strike? Lawyers, Blasting away at incoming space rock raises real risks of nuclear war, experts say. Richard A Lovett reports, May 7, https://cosmosmagazine.com/space/the-biggest-danger-about-an-asteroid-strike-lawyers]

Governments and space agencies seeking to protect the Earth by changing the courses of potentially hazardous asteroids might face major legal hurdles, even if our planet is in the crosshairs of a bolide big enough to kill millions, experts say. One problem is what would happen if one country, worried about protecting its own citizens, attempted to deflect the asteroid, screwed up, and accidentally dumped it on a neighbour. Space law, says David Koplow of Georgetown University Law Centre, Washington DC, is based on the principle of strict liability. “The concept is that space activities are hazardous and therefore the harm should not fall on an innocent bystander,” Koplow says. Another problem stems from the fact that only a few countries have the technological ability to deflect an incoming asteroid, and there is, at present, no international authority tasked with making sure everyone else is represented in the decision-making process. In fact, says Cordula Steinkogler, a space law expert at the University of Vienna, Austria, current treaties don’t even require nations to share information about such hazards, let alone act to protect each other. She notes, however, that the United Nations charter does establish a “very general” duty for them to act toward solving international problems that affect economic, social, cultural, educational, and health wellbeing. Failure to share information can be more than just an inconvenience. To start with, says Petr Boháček, of Charles University in Prague in the Czech Republic, it could make countries wonder if, instead of international cooperation, the rule is actually everyone for themselves. It’s a particularly important problem, he says, because the nations at risk of being hit by an asteroid may not be the ones with the greatest geopolitical power. “Asteroids do not discriminate,” he notes. The nation-state concept of sovereignty, he adds, dates back several hundred years. “I’m not sure how many concepts from the seventeenth century you use in your decision-making,” he says, “but making decisions for planetary defence based on this dinosaur method of decision-making may not be the best choice.” Another problem is that the nation hit by an asteroid might see it as an attack by a foe, and retaliate. “[It] could look like the damage of a nuclear attack,” says Seth Baum, executive director of the Global Catastrophic Risk Institute, a US-based think tank, “so the prospect [of] a counterattack seems like something worth taking very seriously.” Ironically, the risk of this is probably inversely proportional to the size of asteroid. A big asteroid, capable of wiping out an enormous swath of territory, would be seen coming well in advance, and have generated a media frenzy (assuming people didn’t brand it as “fake news”).

were damaged, but amazingly nobody was killed. We’re still trying to work out how often events like this happen. Our information on the frequency of the larger impacts is pretty limited, so estimates can vary dramatically. Typically, people argue that Tunguska-sized impacts happen [every few hundred years](https://academic.oup.com/astrogeo/article/50/1/1.18/201316), but that’s just based on a sample of one event. The truth is, we don’t really know. **What can we do about it?** Over the past couple of decades, a concerted effort has been made to search for potentially hazardous objects that pose a threat before they hit Earth. The result is the [identification of thousands of near-Earth asteroids](https://cneos.jpl.nasa.gov/stats/totals.html) upwards of a few metres across. Once found, the orbits of those objects can be determined, and their paths [predicted into the future](https://cneos.jpl.nasa.gov/ca/), to see whether an impact is possible or even likely. The longer we can observe a given object, the better that prediction becomes. But as we saw with Chelyabinsk in 2013, and again in December, we’re not there yet. While the catalogue of potentially hazardous objects continues to grow, many still remain undetected, waiting to catch us by surprise. If we discover a collision is pending in the coming days, we can work out where and when the collision will happen. That happened for the first time in 2008 when astronomers discovered the tiny [asteroid 2008 TC3](https://cneos.jpl.nasa.gov/news/2008tc3.html), 19 hours before it hit Earth’s atmosphere over northern Sudan. For impacts predicted with a longer lead time, it will be possible to work out whether the object is truly dangerous or would merely produce a spectacular but harmless fireball (like 2008 TC3). For any objects that truly pose a threat, the race will be on to deflect them – to turn a hit into a miss. **Searching the skies** Before we can quantify the threat an object poses, we first need to know that the object is there. But finding asteroids is hard. Surveys scour the skies, [looking for faint star-like points moving against the background stars](https://spaceguardcentre.com/what-are-neos/finding-and-observing-asteroids/). A bigger asteroid will reflect more sunlight, and therefore appear brighter in the sky - at a given distance from Earth. As a result, the smaller the object, the closer it must be to Earth before we can spot it. Objects the size of the Chelyabinsk and Bering Sea events (about 20 and 10 metres diameter, respectively) are tiny. They can only be spotted when passing very close to our planet. The vast majority of the time they are simply undetectable. As a result, having impacts like these come out of the blue is really the norm, rather than the exception! The Chelyabinsk impact is a great example. Moving on its orbit around the Sun, it approached us in the daylight sky - totally hidden in the Sun’s glare. For larger objects, which impact much less frequently but would do far more damage, it is fair to expect we would receive some warning. **Why not move the asteroid?** While we need to keep searching for threatening objects, there is another way we could protect ourselves. Missions such as [Hayabusa](https://solarsystem.nasa.gov/missions/hayabusa/in-depth/), [Hayabusa 2](http://www.hayabusa2.jaxa.jp/en/) and [OSIRIS-REx](https://www.asteroidmission.org/) have demonstrated the ability to travel to near-Earth asteroids, land on their surfaces, and move things around. From there, it is just a short hop to being able to deflect them – to change a potential collision into a near-miss. Interestingly, ideas of asteroid deflection dovetail nicely with the [possibility of asteroid mining](https://theconversation.com/mining-asteroids-could-unlock-untold-wealth-heres-how-to-get-started-95675). The technology needed to extract material from an asteroid and send it back to Earth could equally be used to alter the orbit of that asteroid, moving it away from a potential collision with our planet. We’re not quite there yet, but for the first time in our history, we have the potential to truly control our own destiny.

#### And they cut out the part that says :

But the biggest worry is about the use of [nuclear weapons](https://cosmosmagazine.com/space/think-we-can-nuke-away-an-incoming-asteroid-think-again) against an incoming asteroid. At the moment, there are several methods for diverting a bolide from its collision course, if it is spotted far enough in advance. One is to hit it with a fast-moving rocket, just hard enough to nudge it into missing us. But it’s also possible to divert it by exploding a nuclear device close to its surface. In fact, with a big enough bomb, it should be possible to reduce the asteroid to a spreading cloud of rubble, most, if not all, of which should miss the planet, with the rest burning up harmlessly in the upper atmosphere.

#### NASA also thumps!

Stilwel 20, Blake Stilwell, We Are the Mighty, November 8th, 2019 “This is the weapon NASA will use to fight Earth-ending asteroids” [https://www.wearethemighty.com/gear-tech/asteroid-defense?rebelltitem=3#rebelltitem3] Accessed 2/10/20 // SS

It has nothing to do with oil-rig workers, but it has a lot to do with America's biggest nuclear weapon; NASA has a plan to deflect asteroids that could end all life on earth. It starts with an enormous, experimental, developing launch vehicle and ends with a massive six-shooter of America's largest nuclear weapons. The "Cradle," as it is called, is out to target any near-Earth object that might get too close. And the first test could come in 2029. Behold the quintessential devil in these matters, the asteroid Apophis. On Friday, Apr. 13, 2029, the 1,100-foot asteroid Apophis is going to pass just 19,000 miles away from the Earth. That may not seem very close, but in terms of space stuff, that's a hair's breadth away, uncomfortably close. Scientists are pretty sure it won't hit Earth, but it will be close enough to knock out some satellites. What the close call does bring into question is this: what if there are other near-Earth objects out there that definitely will hit Earth? That's where NASA started wargaming with the cosmos. Assuming the asteroid has a mass of a million kilograms and was headed directly for Earth's center mass, the National Aeronautics and Space Administration decided to figure out what it would take to deflect – not destroy – such a mass. That's where nukes come in to play, specifically these B83 nuclear weapons. Anywhere from two to five years before the projected impact, NASA would send a probe to the asteroid's surface to read the effects of a possible impact with the another object, test its possible trajectory, and determine the best method of rerouting the celestial projectile from Earth. When the best course of action was determined, the U.S. would launch a series of missiles aboard one of its spiffy new Ares V rockets. There would be three kinds: kinetic, nuclear and solar. The solar option would be fired into the asteroid's orbit with a parabolic collector membrane that would focus the sun's energy onto the object, acting as a kind of thruster to disrupt its path or destroy it into smaller, less destructive versions of itself. The kinetic war head would have an inert warhead on it, and would be designed to literally push the object away using force. The nuclear option would send the largest warhead America has, a 1.2 megaton device in a B83 warhead that can produce a mushroom cloud taller than Mount Everest. They would be detonated close to the object but not right on it or into it. The idea is to turn its surface into an expanding plasma to generate a force to deflect the asteroid. There's the boom. The reason NASA can't just outright destroy a near-Earth object was the discussion of a report from NASA and was explored in the early stages of developing this planetary defense. "The Hollywood scenario solution of shooting several intercontinental ballistic missiles at the incoming rock is fraught with danger. It probably would not be sufficient to prevent impact, raising the additional hazard of radioactive materials from the blast being introduced into the atmosphere," the report reads. Hence, the plan is to give it a little push instead.

This turns Baum – it’s literally about miscalc due to nuke deflection

#### Boley and byers is another link – it literally says the us can do it super safely w scientists but panama can’t

#### Their own author concludes that there’s massive thumpers AND deflection now is better than never

Sutter 21 [Paul Sutter, 07-29-2021, "Move asteroids now before they become a threat, researchers argue," Space, https://www.space.com/asteroid-impact-prevent-risk-threat]

There's no doubt that [asteroids](https://www.space.com/51-asteroids-formation-discovery-and-exploration.html) pose a potential threat to life on Earth. Just ask the dinosaurs: When a mile-wide rock slammed into the Yucatán Peninsula 65 million years ago, they had a pretty rough time of it. While it's been quite a while since the last major impact, a new one could come at any point, and we had better be prepared. To help prevent such a calamity, a pair of astronomers is proposing two new strategies. One, we should limit the number of asteroid missions to minimize human-caused orbital changes. Two, we should actively manage the positions of asteroids to place them into orbits that will be safe over the long term. But these events do happen, and potential impactors are notoriously hard to spot. The challenge is that asteroids tend to be small and not shiny, making them incredibly dim and difficult to observe with our telescopes. And even when we do see them, predicting their orbits is even harder. That's because for small, lumpy objects like asteroids, all sorts of things can affect their trajectory — spin rates, uneven heating and cooling, random collisions with other objects and even the [gravity](https://www.space.com/classical-gravity.html) of distant planets all conspire to randomize their orbits. In the end, the researchers found, finding safe harbors for asteroids — orbits that don't intersect with Earth and aren't near any keyholes — will have to be made individually. Missions to asteroids,including [missions intended to deflect asteroids](https://www.space.com/hera-asteroid-deflection-mission-european-support.html) away from Earth, will have to take keyholes into account.

#### No miscalc or war – their ev is bad

Matthew Crosston 18, Ph.D. in International Relations and Comparative Politics from Brown University, Senior Doctoral Faculty in the School of Security and Global Studies at the American Military University, 4/14/18, “No WWIII: The Odd Logic of the New Fake Cold War and the Curious Reality of Feather Pillow Proxy Wars,” https://moderndiplomacy.eu/2018/04/14/no-wwiii-the-odd-logic-of-the-new-fake-cold-war-and-the-curious-reality-of-feather-pillow-proxy-wars/

There has been an awful lot of noise and blowing wind of late across all forms of social media about an impending WWIII between the United States and Russia, most of which involves further involvement and an intensified escalation within Syria. With the US airstrikes (alongside its allied partners, the UK and France) on Friday night (American time), that crescendo is no doubt going to hit an all-time high of anticipation. To that I offer one small contrary warning: don’t hold your breath for the mushroom clouds just yet. There is still too much evidence of designed respectful interaction between the United States and Russia to even begin to suspect a major physical confrontation directly between the two will take place. And this includes last night’s airstrikes. While there is no doubt that current relations between America and Russia are not exactly glowing and positive, there are also numerous examples of restraint to show that both sides do not wish to pursue a war with each other. In some cases, the very evidence that has put people all over the world in a frothy orgasm of Cold War bloodlust is actually the evidence people should be noting for why war is unlikely.

#### Newest research from NASA proves any threat is at least a thousand years away

Mack 19 (Eric, “NASA says city-smashing asteroids aren't so common,” 6-27, <https://www.cnet.com/news/nasa-says-city-smashing-asteroids-arent-so-common/>)

Asteroids are all around us, but we shouldn't be losing sleep over the big buggers. A small space rock was spotted just before slamming into the atmosphere last weekend, and over 20,000 near-earth asteroids have been cataloged, but new research from NASA finds impacts that could do serious damage aren't very frequent. Perhaps the last time an asteroid large enough to inflict serious hurt on a limited part of the Earth's surface (we're not talking about an extinction-level space rock like the one that ended the dinosaurs) came knocking was in 1908