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#### Independently, astronomy is key to avert solar flares which are coming now and wreck the grid.

Siegel 20 “This Multi-Trillion Dollar Disaster Is Coming, And Solar Astronomy Is Our Prime Defense” Ethan Siegel [Ph.D. astrophysicist, author, and science communicator, who professes physics and astronomy at various colleges] January 31, 2020 <https://www.forbes.com/sites/startswithabang/2020/01/31/this-multi-trillion-dollar-disaster-is-coming-and-solar-astronomy-is-our-prime-defense/?sh=6ecc0e367613> SM

On December 12, 2019, the world's most powerful solar observatory — the National Science Foundation's Daniel K. Inouye Solar Telescope — opened its eyes for the first time. With a whopping 4-meter diameter primary mirror and a unique, off-center design, the Inouye Solar Telescope is capable of imaging features as small as 30 km in size on the Sun. Already, in its first light images released on January 29, 2020, features in-between the Texas-sized convective cells were revealed for the first time ever.

But the Inouye Solar Telescope offers so much more than just gorgeous images of our parent star; it's one of a number of solar astronomy projects that are all working together to protect our planet from a multi-trillion dollar disaster that's definitely coming: a catastrophic solar flare. It could come anytime this year or not for another few centuries, but studying the Sun is the only way to be prepared. Here's the science behind these beautiful images and videos.

### 1

#### Mauna Kea is an example of the underlying settler logics of the aff – justifying the occupation of land under the guise of survival is a form of colonial rational totality that erases Indigenous ways of knowing and projects Eurocentric values

Matson and Nunn '17 (Zannah Mae Matson, PhD: Post-Conflict Urbanism: State formation and counterinsurgency infrastructure along Colombia's Marginal de la Selva. Neil Nunn is a graduate student at the University of Toronto. "SPACE INFRASTRUCTURE, EMPIRE, AND THE FINAL FRONTIER: WHAT THE MAUNA KEA LAND DEFENDERS TEACH US ABOUT COLONIAL TOTALITY" Oct. 3rd 2017. <https://societyandspace.org/2017/10/03/space-infrastructure-empire-and-the-final-frontier-what-the-mauna-kea-land-defenders-teach-us-about-colonial-totality/~~#)//> recut 2/13/22 VD

An initial expression of collective refusal, which would later become known as the Battle for Mauna Kea, took place on April 6, 2014, in response to ground-breaking ceremony for what was anticipated to be the world’s most powerful astronomical observatory infrastructure, the Thirty Meter Telescope (TMT). The TMT was set to be the 14th observatory center on the Mountain. The resistance began with the blocking of the road that provided access to the peak of Mauna Kea Mountain and a protest speaking out against the desecration of the sacred ancestral site. This was followed with the disruption of the groundbreaking ceremony by native Hawaiian and cultural practitioner Lanakila Magauil. Magauil interrupted the ceremony by shouting: “like snakes you are. Vile snakes...We gave all of our aloha to you guys, and you slithered past us like snakes...For what? For your greed to look into the sky?” As a result of these acts of resistance, ground was not broken that day. And it has remained this way since. After this day, the land protectors maintained their presence on the mountain by establishing a semi-permanent blockade focused on obstructing the passage of construction vehicles to the site. The successful resistance to the development of space infrastructure on Mauna Kea has not only protected the sacred site from further degradation, it has also made visible the material and symbolic systems that work to reinforce colonial normalcy. Mauna Kea is a dormant volcano and the highest point on the archipelago of Hawai’i. When measured from its base at seafloor, it is the tallest mountain on earth. These towering heights, in a region of the world with minimal light pollution has also earned Mauna Kea recognition of being one of the best spots on the planet for examining the cosmos. Long before the development of modern space infrastructure, however, the peak of Mauna Kea was regarded by native Hawaiians as among the most sacred places on the archipelago of Hawai’i. The place where earth meets the heavens. These divergent perspectives are embedded within a larger relationship of imperial domination that has seeded a century of unrest. While the primary focus of the protest was to challenge a half-century disregard for this sacred site by numerous entities and interests, the Battle for Mauna Kea cannot be understood outside Hawaii’s 125 year-long history of colonial occupation. In 1893, the Hawaiian Kingdom and its Queen, Lydia Kamaka’eha Lili’uokalani, were overthrown by a US led military coup (Long, 2017). Speaking to a spirit of resistance that has existed on the islands since the coup, scholar-activist K. Kamakaoka’ilima Long (2017: 15) states: “four decades of land struggles and cultural historical recovery… have grown a Hawaiian sovereignty movement… playing out in both land defense and as a movement to re-realize Hawaiian political independence as a sovereign state.” This recent assertion of self-determination, now known as the battle for Mauna Kea, has grown to become a global movement with broad support from high-profile figures and the hashtags #Wearemaunakea, #ProtectMaunaKea, and #TMTshutdown trending widely on social media. More than just a source of inspiration for the groundswell anti-colonial movements around the world, this story provides a context to better understand ongoing colonial occupation that is reinforced through the constitutive power of space infrastructure. Working from decades of resistance that culminated in the “battle for Mauna Kea,” we engage the notion of colonial totality to conceptualize the resistance to space infrastructure and the ongoing US occupation of Hawaii, reflecting on what this movement provides for better understanding totality and the relationship between space infrastructure and the shifting nature of colonial occupation more broadly. The notion of totality describes the process by which occupied spaces are coded with Western values in the form of normalized cultures, epistemologies, and institutions that produces an “atomistic image of social existence” (Quijano, 2007: 174). The institutions, ideologies and systems that advocate for the construction of space infrastructure exemplify this process. Astronomers frame the building of the observatory infrastructure as an essential piece in advancing our knowledge of outer space and ultimately achieving ‘universal’ progress. The resistance to development of these infrastructural systems is an invitation to consider the relationship between space as a frontier of discovery and ongoing questions of settler colonialism; the blockade has made visible the inherent relationship between the infrastructure of scientific exploration and the logic of totalizing colonial rationality that enables the development of massive telescopes on occupied land. While these perspectives of colonial totality provide a useful understanding of power and institutions that shape this conflict, we suggest that the Hawaiian land defenders’ refusal of the normalizing force of space infrastructure demonstrates the complexities and conditions relating to the notion of totality and ultimately the inadequacies of the concept. During a public comment period at 2015 University of Hawai‘i Board of Regents meeting, Dr. Pualani Kanaka'ole Kanahele gestures to both the totalizing colonial discourse that suppresses her cultural beliefs and the importance of fighting back against these systems: ... we believe in the word of our ancestors...they say we are the products of this land and that is our truth...and that is what we are fighting for. This is our way of life. This is not our job. We don’t earn money from doing this. But for generations after generations, we will continue to be doing what we are doing today. What Dr. Kanahele speaks of goes beyond the physical destruction of the sacred ancestral site, to describe a hegemonic normalization and occupation that actively effaces traditional Hawaiian ways of being in the world. The words and actions of the land defenders challenge totalizing structures that classify space according to a narrow set of beliefs about the world. Working from these acts of resistance, we want to suggest that the Hawaiian sovereignty movement illuminates how systems of scientific thought and the project of space exploration rely on Euro-western values being the standard by which all other values are measured. It is this wide acceptance of these structures and principles of reasoning that serve to justify the construction of infrastructure that at once reproduces and fortifies these myths. This self-reinforcing relationship between the production of space infrastructure and the logics that justify it speaks to a powerful aspects of colonial totality: the way it gains power by rendering illegible the very elements relied upon to actively produce the other. The generally unquestioned salience of space infrastructure is a powerful example of this. As Quijano (2007: 174) describes, the relationship between colonialism and scientific discourse is a mutually reinforcing and “part of, a power structure that involved the European colonial domination over the rest of the world.” In Hawai’i, we see the settler colonial process of cultural attrition operating through a totalizing force of colonial knowledge systems that extend beyond physical occupation of land to include an erasure of Indigenous Hawaiian ways of knowing. Although the spatialities and technologies associated with this form of stellar navigation are radically dissimilar, we suggest that on a basic level, this form of space exploration is continuous with a lineage of Euro-western projects of discovery. In short, space as the ‘final frontier’ is not simply a metaphor but speaks to the role of astronomy in upholding the ongoing projection of values onto new territories and extending power and acquisition of territory to those complicit in colonial processes. This extends both to the world’s highest peaks and into the heavens. Space infrastructure is central to this ongoing frontier process that seeks to code ‘new’ territories as knowable according to certain values and, as a result, casts inhabitants who fall outside this paradigm as irrational, less-than-human, and exploitable. However, as Lowe (2015: 2) warns, these abstract promises of human freedoms and rational progress are necessarily discordant with the “global conditions on which they depend.” Which is to say that these atomistic systems dispose of the very relationships and elements of life that make them possible. A belief in respecting the sacredness of the world is just one example of this.

#### The 1AC’s reliance on “science” to justify their colonial project is part of a larger tradition of astronomy being weaponized against indigenous populations and crushing dissent that goes back to James Cook

Rao 20, Nithyanand Rao is a freelance science writer. “Astronomers May Not Like It but Astronomy and Colonialism Have a Shared History”, 02/FEB/2020, https://thewire.in/the-sciences/thirty-meter-telescope-native-hawaiians-mauna-kea-astronomy-colonialism

Swanner finds that for native Hawaiians, “science has effectively become an agent of colonisation”, “fundamentally indistinguishable from earlier colonisation activities”. This puts astronomers in a difficult position. They see the economic benefits astronomy brings to Hawai’i – over a thousand jobs, business for local firms and services and, once the TMT comes online, a promise to pay $1 million in annual lease rent – and their own work as a noble pursuit of knowledge. However, they encounter opposition that has charged them with environmental and cultural destruction. “Unfortunately for the astronomers involved in the TMT debate,” writes Swanner, “whether they identify as indigenous allies or neocolonialists ultimately matters less than whether they are perceived as practicing neocolonialist science” (emphasis in the original). Astronomers have attempted a counter-narrative, linking the contemporary practice of astronomy to ancient Polynesian explorers and astronomers who navigated using the stars. A concrete outcome and centrepiece of this effort was a science education centre and planetarium that “links to early Polynesian navigation history and knowledge of the night skies, and today’s renaissance of Hawaiian culture and wayfinding with parallel growth of astronomy and scientific developments on Hawaii island.” Swanner notes the unequal relationship – the centre “merely grafts Native Hawaiian culture onto the dominant culture of Western science … Astronomers do not look to traditional knowledge to carry out their observing runs, after all, but the observatories studding the summit physically deny access to sites of sacred importance.” For Casumbal-Salazar, this strategy of linking telescopes on the mountain to ancient Hawaiian culture reinterprets colonial conquest as inheritance while consigning indigeneity to history. This is not hard to spot from a glance at the TMT website, for example. The homepage displays the results of a “statewide scientific public opinion poll” which asked, among others, the following question: “Do you agree or disagree that there should be a way for science and Hawaiian culture to co-exist on Maunakea?” The way the question has been framed is revealing: science and Hawaiian culture are seen as distinct entities. The conflict at Mauna Kea, as Swanner and Casumbal-Salazar learn from native Hawaiians, is not just over the construction of the TMT. The problem is that anything is being built on top of a sacred summit**. Nevertheless,** it is not incidental that the conflict involves science, particularly astronomy. Science did not merely happen to accompany colonialism: they are deeply linked in ways that are still being unraveled by historians who are tracing “the roots of contemporary science in the projects and practices of colonialism,” filling in the elisions from standard histories of science. In their white paper, Chanda Prescod-Weinstein, an American-Barbadian cosmologist at the University of New Hampshire, and her co-authors give examples of how colonial conquests have historically enabled, facilitated or benefited astronomy. James Cook, the British explorer who was the first European to establish contact with Hawai’i, was tasked with leading an expedition to Tahiti to observe the 1769 transit of Venus (to help determine the Earth-Sun distance). But he had also been given sealed orders to search for Australia, indicating “that astronomy and colonisation have been entwined in the Pacific since first contact.” Colonial conquests helped develop astronomy and cartography, not least through the establishment of overseas observatories. Other sciences “co-constituted” with colonialism include botany and medicine. And, as one author reviewing the existing scholarship put it: “One cannot imagine Charles Darwin’s work being possible without his access to plant and animal specimens derived from several European empires.” Science and medicine “functioned not merely as a ‘tool’ for a project already imagined, but as a means of conceptualising and bringing into being the colonial project itself.” This history has consequences – not because the TMT is “a pawn in a long, losing game” for the Hawaiians (as one condescending New York Times article phrased it) nor is the issue confined to questions of representation of colonised peoples in astronomy (although only one Native Hawaiian holds a PhD in astronomy, with none in tenure-track positions at major institutions). For Casumbal-Salazar, it is about how “Western law, science and the state together control the ways humanity is imagined in the first place” and about “the techniques of governance by which Kanaka ‘Ōiwi [native Hawaiian] claims to land, sovereignty and independence remain in perpetual deferral.” This settler colonialism, he argues, is the product of a sustained process with territorial ambitions. As Swanner notes, dismissing this neocolonialist image of science has only resulted in native communities continuing to “report feeling victimised while scientists’ efforts to expand their research programs suffer social, legal and economic setbacks.” In response, astronomy practice is changing. In her thesis, Swanner tracks how the opposition to mountaintop observatories and the rigours of preparing an environmental impact statement have forced astronomers to directly engage with the public and acknowledge their concerns. Prescod-Weinstein and her coauthors go further, advancing a number of recommendations for a more ethical astronomy. For example, they call on the astronomy community to stop weaponising disagreements within native communities, which they have a history of doing. At Kitt Peak, for example, leaders of a native community signed a lease agreement in 1958 after they were invited to view the sky through one of the telescopes of the University of Arizona, even as others in the community remained unconvinced. Such tactics led the community to feel their interests weren’t fairly represented. They filed a lawsuit against the National Science Foundation fifty years later. Prescod-Weinstein and her colleagues also recommend that “astronomers reject the use of state power to get what they want”, “consider what is globally healing for the communities rooted in the land” and “engage in dialogue and negotiations in good faith, understanding that a deal may not be reachable, with a mandate to respect a ‘no deal’ outcome.” The paper by Native Hawaiian scientists also recommends the same things, and asks: “Do indigenous people have the power to decide what happens to their own homelands?” At Mauna Kea, this means understanding that Native Hawaiians, from the beginning of the opposition to telescopes on the mountain, “were not fighting against something,” as Casumbal-Salazar notes, “so much as they were fighting for something: the protection of the mountain from further development… Perhaps we should be asking what constitutes progress. Who determines that? And what are the costs of its production?”

#### **The Daniel K. Inouye Telescope mentioned in their Siegel ev is built on the summit of Haleakala – that’s a sacred cultural site for Native Hawaiians and is part of the crux of their culture**

Wianecki 09, Shannon Wianecki, “Eyes on the House of the Sun”, <https://www.mauimagazine.net/eyes-house-sun/>, accessed 2/13/22, sb

“When is a site too sacred to be built upon?” asked Kaleikoa Ka‘eo, a Hawaiian-studies professor at Maui Community College. “Would you even consider building a telescope on Machu Picchu, Mount Fuji, or Mount Zion?” Ka‘eo’s questions drew applause at a rowdy 2006 public meeting in Paukakalo, where plans to construct the world’s largest solar telescope on the summit of Haleakala came under fire. Three years later, the Advanced Technology Solar Telescope (ATST) is closer to becoming a reality, despite sustained and passionate opposition from the community expected to host it. If built, the groundbreaking telescope will rise 143 feet from Maui’s tallest peak. Its 13-foot-diameter mirror will be capable of detecting the sun’s magnetic fields and surface phenomena with greater clarity than ever before possible. National Solar Observatory astronomers call the ATST “the biggest leap in our capability to study the sun since Galileo.” The Observatory proposed the $274 million project to the National Science Foundation, a federal agency that funds cutting-edge science. If approved, the ATST will take four years to build and could achieve first light by 2017. Jeff Kuhn, the associate director of the University of Hawai‘i’s Institute for Astronomy, says it could revolutionize our understanding of Earth’s closest star, recalibrate our ideas about climate change, and allow us to predict and defend ourselves from solar storms. While highly anticipated by solar scientists, the new telescope is seen as a scourge by many island residents. Native Hawaiians, wildlife biologists, and wilderness advocates contend that the ATST’s construction will desecrate one of Hawai‘i’s most significant natural and cultural treasures, endanger rare native species, and further erode the spiritual underpinnings of the Hawaiian people. Observatory researchers evaluated seventy-two sites around the globe before declaring Haleakala the premier location for the ATST. According to their studies, no other spot on Earth possesses Haleakala’s dust-free atmosphere and dark-blue daylight sky—two qualities essential to the telescope’s operation. The aptly named “House of the Sun” is also home to Haleakala National Park. Every year, 1.7 million visitors ascend the 10,023-foot mountain to stand in awe of the volcano’s vast landscape and explore its otherworldly terrain. The Park Service manages the summit, excluding eighteen acres leased to the University of Hawai‘i for astronomical research. This “Science City” already houses eleven space-probing stations, which have slowly increased in number since 1961. Before agreeing to fund the ATST’s construction, the National Science Foundation embarked on an Environmental Impact Study (EIS), as required by state and federal law. The Foundation solicited comments and hosted public meetings around Maui starting in July 2005. Since then, island residents have submitted enough oral and written testimony to fill a volume two inches thick. Project supporters speak of the high-tech jobs, educational opportunities, and international prestige the ATST would bring to the island. The telescope is expected to employ thirty-five people and pump $18 million annually into the economy. After passage of the 2009 federal budget, which allocates funds for the project, U.S. Senator Daniel Inouye (D–Hawai‘i) called the telescope “a powerful, next-generation instrument . . . that will offer many scientific breakthroughs.” Meanwhile, islands residents express concerns over the future telescope’s visibility from various locations, energy consumption, impact on the fragile alpine ecosystem, and increased traffic on the mountain’s only road. Over the past four years, the overwhelming majority of testimony has come from Native Hawaiians, many of whom oppose the building of yet another, larger telescope on the summit and have sought to articulate the loss of something intangible yet deeply important to them: the cultural and spiritual connection to their land. Land of the Gods In a written statement, the Association of Hawaiian Civic Clubs—a grassroots organization representing more than fifty civic clubs nationwide—firmly opposed the ATST’s construction, calling Haleakala, “a sacred cultural site. . . . The beauty of its unblemished slopes has been recorded for centuries in Hawaiian legends, chants and songs. Native Hawaiians revere this site as a place of great mana [spiritual power].” Haleakala is wao akua, “land of the gods,” to many Hawaiians. It holds the hidden bones of their ancestors. The landscape itself possesses tremendous spiritual significance, not only to Hawaiians but also to Maoris and people across the Pacific who share a common mythology. It’s the legendary place where the demigod Maui snared the sun with his lasso. Its seemingly barren volcanic soil shelters rare native species, including the majestic silversword and the endangered ‘ua‘u, or Hawaiian seabird—believed to be an aumakua, or ancestral god. “Haleakala is precious,” says Hawaiian activist Mikahala Helm. “It is integral to our identity as Hawaiians and to our culture. . . . The impact on our personal identity [if the telescope were built] would be devastating.” Hawaiians view Haleakala’s volcanic rock as an embodiment, or kinolau, of Pele, the volcano goddess. Crushing or removing rocks, as would be necessary during the telescope’s construction, is synonymous with wounding Pele’s sacred body. Native Hawaiian kahu (priest) Charles Maxwell Sr. shakes with vehemence as he recounts what happened during the construction of the Air Force’s Advanced Electro-Optical System telescope on the summit more than a decade ago. “They promised they would not take one rock. One hundred and twenty tons of rock they took off the mountain.” His trust is broken, he says. “I’m seventy-two years old and I draw a line in the lava. If I personally have to go up there and block the trucks that are going to build this monstrosity, I will.” For many Hawaiians, this telescope represents yet another page in a painful, still-fresh history in which Western ambitions have overruled indigenous values time after time. In fact, Science City inhabits ceded land—territory that belonged to the Hawaiian monarchy and was absorbed by the United States at the time of annexation. At one of the final public meetings this past June, Lei‘ohu Ryder hefted a thick, bound document: the anti-annexation petition that circulated Hawai‘i after the 1893 overthrow of the monarchy. “My ancestors signed this petition,” said the kahu and schoolteacher. “They did not want the Islands to be destroyed spiritually.” Essential Research While Native Hawaiians filled page after page of testimony, seeking to convince the National Science Foundation that their concerns are valid, the astronomers likewise faced the challenge of showing a skeptical community how the proposed solar telescope has relevance to their lives. The sun has a rhythm, says Jeff Kuhn. Our nearest star changes in ways still mysterious to science, even as they affect life on Earth. The solar scientist hopes to one day peer through the ATST into the sun’s powerful magnetic fields, where solar weather originates. Throughout history, explains Kuhn, fluctuating solar weather has determined the price of wheat, the rise of the sea, the disappearance of civilizations on our planet. Periodic sunspots correspond with brighter sunlight and hotter temperatures. Astronomers speculate that a solar-induced warm period contributed to the demise of early southwestern civilizations such as the Anasazi, while a cool period, characterized by fewer sunspots, caused the Vikings to abandon the west coast of Greenland. “We can’t change the sun, but we certainly want to have vision for what the sun is and does,” says Kuhn. “In twenty years, will the sun be brighter than it is today? Knowing that the sea level will rise or fall will determine social policy.” A piece of artwork at the Institute for Astronomy’s research facility in Pukalani depicts what Kuhn and his colleagues hope to see through the ATST. It’s one of those “magic eye” pictures: cross your eyes just right, and you can see another dimension. Spaghetti strings of energy loop off the curved surface of the sun in 3-D. It’s a rendering of a solar flare, a burst of energy large enough to do what one did in 2003: darken Sweden’s power grid, knock out Japanese satellites and disorient pilots flying over the North Pole in one fell swoop. In the short term, the ATST could help scientists defend our technology-dependent society by providing information about solar flares and other such phenomena. Over time, observations of solar activity could help scientists predict and prepare for global climate change. Education is a big component of the ATST project, says Kuhn, who’s volunteering his time and expertise to get a four-year science-and-technology degree off the ground at Maui Community College. Both the National Solar Observatory and the National Science Foundation have expressed their commitment to engaging Maui students in high-level scientific research. The Institute’s high-tech facility is filled with expensive, fascinating devices designed to bring outer space into the lab. Kuhn points to a sophisticated model built by student interns: an adaptive optics machine that removes the twinkle from stars. Adaptive optics—a technology that allows astronomers to counter the effects of atmospheric blurring by manipulating deformable mirrors—is one of the scientific advances that will be employed in the ATST. According to Craig Foltz, one of the National Science Foundation astronomers in charge of investigating the project’s feasibility, the ATST is potentially prestigious for Hawai‘i. While it would be funded by the Foundation, he says, “It is a project of the entire solar-physics and space-physics community.” Science vs. Science The physicists, however, are at odds with the biologists. Take, for example, the question of how the telescope’s construction will affect native seabirds. “This project has made my hair grey,” says Haleakala National Park wildlife biologist Cathleen Bailey. She monitors the world’s largest known breeding population of endangered Hawaiian petrels—several of which nest underground within sixty feet of the proposed ATST’s site. Bailey acknowledges that telescope proponents have taken “pretty extreme measures” to study the birds, including two years of recording burrow activity with infrared cameras. But she disputes their findings: that the ATST is not likely to adversely affect the Hawaiian petrel. Evidence collected during recent road resurfacing and a 2005 renovation of another observatory at the summit—two projects many times smaller than the ATST—demonstrates that construction in general harms the birds, says Bailey. “[Baby birds in] burrows near construction failed to fledge.” The Department of Land and Natural Resources’ official response goes further, emphasizing that “the rate of reproduction of ‘ua‘u is so low that negative impacts on a single nest has [sic] significant effects on the species.” Since birds are likely to suffer from crushed burrows, exposure to exhaust fumes, and collisions with vehicles and buildings, the department recommends that ATST project managers immediately apply for incidental “take” permits, to avoid criminal charges associated with harming or harassing a federally endangered species. Haleakala Park Superintendent Sarah Creachbaum voices yet another consideration: the telescope’s potential impact on people’s experience of wilderness. “The Wilderness Act talks about the importance of wilderness to the health and happiness of human beings,” says Creachbaum, referring to the legislation that mandates the preservation of national parks and undeveloped landscapes. “I have concerns that the telescope is going to be very big. . . . I’m afraid it will be the thing that finally overwhelms the crater.” The EIS includes a survey of 543 park visitors that indicates few would care if another telescope were built. The Park Service disagrees, citing technical flaws in the survey. A third-party review noted that local residents, those who identify as Hawaiian or part-Hawaiian, and backcountry visitors were essentially absent from the survey sample. “People have been looking to the Park Service to slow down or stop this project,” says Creachbaum. “But that’s not within our purview. I have no recourse, based on my judgment, to stop the telescope.” Congress said as much—at least in respect to one of the Park’s concerns: the use of its only road. The 2009 federal budget includes the following instructions: “The Committees on Appropriations are aware and supportive of the potential development of an Advanced Technology Solar Telescope (ATST). . . . As the proposed ATST construction site can only be accessed via a road through the Haleakala National Park, the Service is expected to work cooperatively with the National Science Foundation to effectuate the issuance of a Special Use Permit as soon as possible.” Mitigation In addition to conducting public meetings related to the EIS, the National Science Foundation consulted with summit stakeholders in compliance with Section 106 of the National Historic Preservation Act. A primary goal of these meetings, which focused on cultural impacts, was to gather ideas for mitigation, should the telescope’s construction proceed. Mitigation is the legal way of saying: “We know this project will cause adverse effects. Let’s agree on ways to minimize or compensate for the damage before it occurs.” For instance, to compensate for the telescope’s marring local residents’ view, astronomers could offer monthly stargazing classes for the community. This process offers the community its only insurance that such measures become legally binding agreements. While more than 120 stakeholders were invited to participate, most refused to offer suggestions for mitigation. The majority of participants echoed the sentiments of eighty-seven-year-old conservationist Mary Evanson, founder of the Friends of Haleakala, a decade-old volunteer organization: “No mitigation will ever cure the ills that the telescope creates.” Charles Maxwell Sr. did submit a mitigation proposal, despite his opposition to the project. After fighting previous observatories at the summit and losing, he says he’d rather get something than nothing. He recommends building a $32 million traditional Hawaiian navigation and astronomy center in the nearby town of Kula to serve students from kindergarten through post-graduate school. A second proposal, from Maui Community College, requests funds to bolster science and math education and workforce advancement for Native Hawaiians. Maui County Council Member Sol Kaho‘ohalahala offered some of the most interesting ideas during consultations in July of 2008. Early Polynesians were among the world’s greatest astronomers, using the stars to crisscross the Pacific at a time when Europeans fretted over tumbling off the edge of a flat earth. As a Native Hawaiian who has sailed on the Hokule‘a voyaging canoe, Kaho‘ohalahala suggested constructing a star compass, the rock structure used by indigenous navigators to identify the sun’s position from equinox to solstice, at the summit of Haleakala. He also recommended engaging a konohiki, or traditional Hawaiian land manager, to oversee all activity on the mountaintop. After thirty-three consultations, a consensus over acceptable mitigation never materialized. The debate rages even among stakeholders—the proposal submitted by the college was contested by two of its own faculty members, Hawaiian Professors Kaleikoa Ka‘eo and Ki‘ope Raymond. A Done Deal? The ATST’s final Environmental Impact Study was released this past July; the National Science Foundation is reviewing its contents and will soon decide whether to recommend the project to Congress for approval. But as early as 2006, many opponents were convinced the decision to build the telescope had already been made. “I’ve been consulting for many years. I know the game,” said Ka‘eo. “We come, we say a few words, and they say, ‘Thank you very much,’ and do what they do anyway.” Indeed, according to the final EIS, the Foundation is currently soliciting comments on a draft Programmatic Agreement to address the telescope’s adverse cultural impacts—despite the failure of the Section 106 consultations to deliver a consensus. Scientists still face an uphill challenge in convincing Maui residents of the telescope’s importance. Opponents have been discouraged by a federal review process that places the burden on the community to articulate and defend the values of the mountain—a daunting challenge when those values are intangible, perhaps even incomprehensible, to a Western world view. While ‘ua‘u burrows can be counted and visitor experience quantified, spiritual essence cannot. “The real issue,” says Kuhn, “is that [Westerners] come from a society where culture, religion, and science are completely separate. But in the Hawaiian tradition, there’s no separation. “I don’t think the telescope is the issue. I think it’s cultural survival.”

#### **The construction of the Daniel K. Inouye Telescope eschews native Hawaiian voices, tradition, and sovereignty in favor of white supremacy disguised as “science”**

Loomis 17, Ilima Loomis is a journalist based on Maui in Hawaii. “How the world's largest solar telescope rose on Maui while nearby protests derailed a larger scope”, 1 AUG 2017, <https://www.science.org/content/article/how-world-s-largest-solar-telescope-rose-maui-while-nearby-protests-derailed-larger>, accessed 2/13/22, sb

Jeff Kuhn remembers his first trip to Haleakalā, the summit of the Hawaiian island of Maui. It was 1996, and Kuhn, a solar physicist, was being courted by the University of Hawaii's Institute for Astronomy (IfA) in Honolulu. The recruitment tour included a visit to the handful of IfA telescopes atop Haleakalā, which stands more than 3 kilometers high. Kuhn climbed through switchbacks for nearly an hour in a dreary drizzle. Then the mist suddenly parted. Kuhn looked down and realized he was above the clouds. "It's like a giant door opened up in the sky," he says. "I looked up, and saw this incredibly dark blue sky, and the sun." Kuhn had a good feeling about this place, but he wanted to test his hunch. Getting out of the car, he held his thumb up to the sky, covering the blinding, brilliant disk of the sun. In most places, this test reveals a halo—a sign that dust particles in the atmosphere are scattering light. Dust makes it hard to see faint things next to bright things, like the corona, the wispy outer atmosphere of the sun that appears during eclipses. But on Haleakalā, Kuhn saw no halo—only a deep, dark blue. It was the perfect place, he decided, to build the largest solar telescope in the world. Haleakalā is also a special place for Tiare Lawrence, a community organizer on Maui who has visited the summit since childhood. Native Hawaiian culture celebrates a profound spiritual connection with the land, and few places are considered more sacred than high mountain peaks. In ancient times they were regarded as wao akua—"realm of the gods"—where deities and demigods walked the earth. Today, they are still treated with reverence, places many Hawaiians visit to honor ancestors and practice spiritual traditions. These days, when seeking spiritual guidance, Lawrence drives up to the summit, often visiting one of two ahu, or stone altars. "Haleakalā has always been that place I go to cleanse, to think, to give pule [prayer], to find answers," she says. But now the white dome of a towering new telescope enclosure, nearly 14 stories tall, looms over the shrine. For Lawrence, who participated in protests against its construction, the telescope feels like a slap in the face. "It hurts," she says. Other Hawaiians see an affront not just to their beliefs, but also to their sovereignty. "As a people, we don't have control of some of our most sacred spaces," says Kaleikoa Kaeo, a Hawaiian-language educator at the University of Hawaii Maui College in Kahului, and a leader of the telescope opposition. "They say it's Hawaiian culture versus science. I say, ‘No, it's Hawaiian culture versus white supremacy.'" Despite their complaints, the $344 million Daniel K. Inouye Solar Telescope (DKIST) is nearly complete. The exterior dome was finished in August 2016. The telescope's most important part—a 4-meter mirror—was cast in Germany, polished to a precise shape in Arizona, and shipped to Maui. This week, the road to the summit was set to be closed on the night of 1 August, so that the 3-ton mirror could be delivered at a slow crawl in a wide-load truck—with a police escort. In 2019, when the dome opens and the mirror is trained on the sun for the first time, the DKIST will be the largest and most powerful solar telescope in existence, capable of studying the sun's surface, corona, and magnetic fields in unprecedented detail. "It's gratifying to know that within my lifetime we actually will be using this telescope," says Kuhn, who helped conceive the design in the 1990s and now serves as one of four lead investigators on the project. Across the 48-kilometer Alenuihāhā Channel, the battle to build another major telescope project on a sacred peak has taken a very different turn. Two years ago, protests led by Native Hawaiians blocked the start of construction of what was set to be one of the world's largest optical telescopes, the Thirty Meter Telescope (TMT), atop the 4200-meter-high Mauna Kea on Hawaii Island. Court setbacks followed, although last week a former state judge recommended that the state grant a disputed permit. But the telescope faces months of further hearings, and even if it gets its permit, opponents have vowed to take the case back to court. TMT officials say that if they are not able to start construction by April 2018—and if the state is unable to manage safe construction access to the site—they will switch to an alternate site: La Palma, in Spain's Canary Islands.

Why did these two seemingly similar projects have such different outcomes? From concept, to location, to politics, to public relations, many factors combined to smooth the DKIST's way, whereas the TMT faced bigger challenges from the start, observers say. "There are a lot of similarities between the two projects, and also between the opponents of the projects," says Günther Hasinger, director of IfA, which as host for both telescopes receives a portion of their viewing time. "But there was just a series of mishaps, or a confluence of more difficulties on Mauna Kea than on Haleakalā, that brought us to where we are now." In the Hawaiian language, Haleakalā means "house of the sun"—the place where the demigod Maui snared the sun to slow its passage across the sky. The traditional meanings seemed almost too perfect to solar astronomers looking for a place to build a successor to the modest, 1.6-meter telescopes they had used for decades. Astronomers with the U.S. National Solar Observatory (NSO), headquartered in Boulder, Colorado, had whittled down a list of 50 proposed sites to six locations, where they tested the observing conditions. In 2005, NSO picked Haleakalā as the place with the lowest amount of dust and air turbulence—the atmospheric distortions that make stars twinkle—because it sits on top of a tall, cone-shaped volcanic mountain surrounded by a smooth, flat ocean. It also had a tract of land already dedicated to astronomy. In 1961, Hawaii's governor gave the University of Hawaii ownership of a 7-hectare parcel near the summit. Three years later, the university dedicated a first small solar telescope in what would soon become known as Science City. Today it is home to six academic telescopes (aside from the DKIST) and four space surveillance telescopes operated by the U.S. Air Force. Still, the proposal to build a big new solar telescope went unfunded for years. It took the 2008 global economic crash to propel the DKIST forward. In 2010, the federal government's economic stimulus package, which targeted "shovel ready" projects, delivered a large chunk of the funds needed to build the telescope. In 2013, the project, originally called the Advanced Technology Solar Telescope, was renamed for Hawaii's longtime Senator Daniel K. Inouye. Current solar telescopes can see things on the surface of the sun 300 kilometers across—100 kilometers under special circumstances—but many of the details scientists want to study are smaller than that. "You need a microscope, and that's what DKIST is," says NSO Director Valentín Martínez Pillet. With a resolution of 25 kilometers, the DKIST ought to be able to make out a long-sought feature: magnetic flux tubes, twisted and tangled filaments that can channel energy into the corona. They may hold clues to a long-standing mystery: why the corona is a million degrees hotter than the photosphere, the visible surface. But it's not just the DKIST's resolution that matters; the 4-meter mirror offers badly needed light-gathering power, too. "It surprises many nighttime astronomers that when we're looking at the sun, we need sensitivity," says DKIST Project Director Thomas Rimmele. Yet astronomers need to block the vast majority of the sun's light to see the faint corona, or to drill down into the sun's atmosphere at specific wavelengths. "We're struggling to get enough photons collected," he says. The added collecting power also means that DKIST scientists don't need long exposures: Their quick snapshots will capture the sun's transient features, such as the reconnection of twisting magnetic fields that drives violent space weather events like solar flares and coronal mass ejections. The DKIST's ability to investigate the solar eruptions that can endanger electric grids and communications may be one reason why it received more public support than the TMT, which is solely a research tool, Hasinger says. But he believes a more important difference between the two projects is simply their scales. At 18 stories, the TMT would be not only the largest telescope on Mauna Kea, it would be the largest humanmade structure on Hawaii Island. The TMT's footprint—2 hectares including its roads and parking lot—is 10 times the size of the plot used for the DKIST. "It's just a huge structure," Hasinger says. "In relative size you could say it's similar [to the DKIST], but in absolute size it's much bigger." Moreover, Mauna Kea is not only higher than Haleakalā, it's the highest peak in the Pacific—and, consequently, it offers Native Hawaiians a higher-profile platform to air their grievances. Mauna Kea also poses a bigger management challenge for the University of Hawaii. The science reserve on the Mauna Kea summit spans nearly 5000 hectares—an area more than 650 times larger than Maui's compact Science City. "If someone is not happy with the management of Mauna Kea, it falls directly on the university," Hasinger says. "On Haleakalā we only have the small area of Science City. The rest is managed by the national park." And although the university owns Science City, its preserve on Mauna Kea is a lease, which means it is subject to state audits. In 1998 and 2005, the auditor released critical reports about IfA's stewardship of Mauna Kea, providing ammunition to groups opposed to mountain telescopes. (A follow-up audit in 2014 reported improvements in IfA's management of environmental and cultural resources.) The organizations behind the two projects are very different, astronomers note. The DKIST is a national project, funded by the National Science Foundation and owned by NSO. Using federal funds meant that NSO had to follow strict accounting procedures, perform a federal environmental impact assessment, and satisfy U.S. historic preservation rules. By contrast, the TMT, a private consortium supported by institutions in five countries, received no federal funds for construction. That meant it didn't have to deal with those same regulations. "The opponents were able to sell it as this foreign company coming in and basically using our mountain for their purpose, whereas [the DKIST] at least is a national interest," Hasinger says. The groundbreaking ceremonies for the two projects reflected the stark differences in their characters—and also exposed their different vulnerabilities. Kuhn remembers going as a guest to the TMT ceremony in October 2014. He stayed at a fancy Hawaii Island resort, surrounded by scientists and media from around the world, as big-screen TVs ran a live feed of the TMT's construction site on Mauna Kea. But the celebratory atmosphere faded when Native Hawaiian protesters blocked a convoy of dignitaries heading up the mountain for a blessing and groundbreaking. As protesters shouted and chanted, organizers eventually turned off the live feed. "It was a disaster," Kuhn says. "I understand why they wanted a great big party—it was a way of saying, ‘Yes, we're moving forward, partners, come and join us, and bring your checkbooks.' But I think it had the opposite effect, which was to put up a lightning rod that attracted lightning." The event "marked real doubt" about the project's future, he recalls. TMT Executive Director Ed Stone, who is also a professor at the California Institute of Technology in Pasadena, concedes the event didn't go as planned. "Certainly whatever groundbreaking there was could have been done better than what happened," he says. In contrast, the groundbreaking ceremony for the DKIST, in November 2012, was kept "very private," with only a handful of people closely involved with the project, Kuhn says. "I think there was an honest sensitivity to those people who felt strongly that it shouldn't be there," he says. **"**Secret," snorts Kaeo, when asked about the private DKIST launch. Kaeo's opposition to the telescope runs just as deep as his resentment of the TMT. But he says practical issues made it harder to disrupt construction of the solar telescope. Mauna Kea, he notes, is wide open, sparsely populated, and minimally patrolled by authorities. "You can literally go up and touch the telescopes," he says. Science City, on the other hand, can be reached only by traveling through a national park. The summit is swarming with tourists and park rangers, and the telescopes are in a tight cluster, safely ensconced at the end of a private road. And don't forget the military presence. "When you go up there, you're under surveillance." Kaeo says. "Now you're talking federal charges, federal crimes." He and Lawrence did their best to protest the DKIST anyway. By the summer of 2015, work on the telescope had been underway for more than 3 years, and opponents were largely inactive after almost a decade of court challenges that failed to stop the project. But images of Native Hawaiians being arrested on Mauna Kea inspired them to make one more stand. In June 2015, protesters blocked the DKIST's construction baseyard, a staging area in central Maui at the foot of the mountain. They succeeded in turning back a wide-load convoy scheduled to deliver parts to the construction site late at night. A month later, the DKIST's builders tried again. On 31 July, more than 200 protesters gathered just after dusk in the road outside the baseyard. They began to shout and chant in Hawaiian, some blowing into conch shells as trumpets. They linked their arms in plastic pipes to form a human barrier across the road. At about 10 p.m., Lawrence watched as police in riot gear began moving in to disperse the crowd. They used hacksaws to cut through the plastic pipes and started arresting protesters. At the last minute, Lawrence recalls, she rushed forward and lay down in the road. Police arrested her, along with Kaeo and 18 other people. "I was ready for it," she says. "It was exhilarating. I'd do it again if it helped our cause. Nobody wants to resort to that. Obviously it's not fun going through the court system, but at that moment, I was a proud Hawaiian." Lawrence speaks cautiously, sensitive to portrayals of the protesters as "crazy Hawaiians." She is quick to point out that, for opponents of the telescopes, blockading the transport was a last resort, after almost a decade of going through official channels. "We did everything we could through the courts, the hearings, the public meetings—what more do we have to lose by doing direct action?" Kuhn acknowledges that his own understanding of Native Hawaiian objections have evolved since he first championed a solar telescope on Maui. Earlier, when surveys of the Science City site found a few sensitive archaeological sites, he bristled at the expense of hiring a cultural consultant to monitor construction and ensure work follows traditional protocol, such as not removing stones from the site. Nor did he like the idea of workers and scientists being "indoctrinated" with an educational video about the role of the mountain in Hawaiian culture and spirituality. But over time, he says, after listening to countless hours of testimony at public hearings and meeting in private with Native Hawaiian leaders, he came to agree that it was important to respect native beliefs. The DKIST has made other concessions. Native Hawaiian leaders have given input to the project through a special working group. A dressing area was built at the summit for Hawaiian practitioners conducting ceremonies at the ahu—which, he notes, were constructed in the 2000s as part of IfA's cultural management plan. And the DKIST has established a $20 million program at Maui College that combines Hawaiian culture with science education. "There was real dialogue that took place," he says. Making a good faith effort to address Native Hawaiian concerns led to real compromise and understanding on both sides, he says. Although the concessions mollified some opponents, they do not satisfy Kaeo, who says they fail to address the fundamental problem: Hawaiians had no say in giving away their mountain. He says he will continue to resist. As Science went to press, Kaeo was rallying protesters to demonstrate against the planned delivery of the mirror. "Even if we lost the battle," he says, "our goal is still to win the war, and the war is about our right to control for ourselves our future in this place." It's another one of those deep-blue-sky days on Haleakalā, and LeEllen Phelps, the DKIST's thermal systems manager, is showing a group of visitors around. Phelps opens a door onto a catwalk that traces the outside of the telescope's white dome, and pauses for a moment to take in the view. Across the Alenuihāhā Channel, she can see the massive profile of Mauna Kea, and, just barely, white flecks—the domes of existing telescopes. Below her stretches a forbidding volcanic landscape, dotted with silverswords—endangered plants, adapted for the harsh ultraviolet light of Haleakalā, that look like oversized sea urchins. And at her feet, almost in the telescope's shadow, is one of the two shrines. "When I first got hired, I came up here and sat on a rock and listened," Phelps says. Haleakalā has been recognized as one of the quietest places on Earth, but between the rumble of car engines and a chorus of humming telescope chillers, she quickly noticed that wasn't the case at Science City. With the ahu in mind, she insisted on—and got—better soundproofing and a quieter cooling system, meeting sound engineering standards for a place of worship. The summit may be a vantage for astronomy, but it's also holy ground. "It might not be my culture," she says, "but if you spend any time here, it's a place worthy of respect."

#### The impact is setter futurity. Their fantasies of extinction reflect settlers’ psychological investment in imagining the end of the world – fear of extinction is used to continually justify the existence of the settler state and engage in dispoession

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.

#### Settlers cannot be trusted as legitimate actors—they are implicated by their violent occupation. The ROJ is to perform insurgent education to start a resurgence of activism and reclamation of indigenous histories and homelands.

**Corntassel 11**, Jeff, citizen of the Cherokee Nation and Acting Director of Indigenous Governance, Faculty of Human and Social Development, University of Victoria, “Indigenizing the academy: Insurgent education and the roles of Indigenous intellectuals”, *Federation for the Humanities and Social Sciences*, http://www.ideas-idees.ca/blog/indigenizing-academy-insurgent-education-and-roles-indigenous-intellectuals

Some scholars – like Paulette Regan in Unsettling the Settler Within and Megan Boler and Michalinos Zembylas in Discomforting Truths: The Emotional Terrain of Understanding Difference – have discussed this approach as a “pedagogy of discomfort.” I take it further as a demand for insurgent education. If an insurgency is a state of rebellion or act of rising in revolt against established authority, then insurgent education is an important part of an anti-colonial struggle and of pedagogies of decolonization. According to Mohawk Taiaiake Alfred, “…to be a real Indigenous intellectual, one must be a warrior of the truth.” If the “university is contentious ground”, what are some of the roles and responsibilities of an Indigenous intellectual? The late Standing Rock Sioux scholar Vine Deloria, Jr. challenged Indigenous educators and students to be more like “scouts” by using their powers of observation to provide useful information to their Indigenous communities in order to guide future decisions. Others, such as Anishinaabe philosopher, Dale Turner, discuss the need for “word warriors” who must mediate and reconcile indigenous and European worldviews. Being a warrior of the truth is not, however, about mediating between worldviews as much as challenging the dominant colonial discourse. It is about raising awareness of Indigenous histories and place-based existences as part of a continuing struggle against shape-shifting colonial powers. Insurgent education entails creating decolonizing and discomforting moments of Indigenous truth-telling that challenge the colonial status quo. It does this by questioning settler occupation of Indigenous places through direct, honest, and experiential forms of engagement and demands for accountability. Insurgent educators exemplify Indigenous forms of leadership by relating their daily struggles for Indigenous resurgence to broader audiences using innovative ways that inspire activism and reclamation of Indigenous histories and homelands. The truth is that Indigenous peoples are land-based and water-based cultures and need new ways to educate settlers who have become much too comfortable and complacent about living on stolen Indigenous homelands. If colonization is about disconnecting peoples from their lands and territories and depriving them of their cultural practices, then acts of decolonization – including decolonizing knowledge – are, in part, about reconnection and community resurgence. As part of a larger decolonizing strategy, **insurgent education does at least four things**: First, **it localizes Indigenous struggles** and avoids the pitfalls of what I call “Free Tibet Syndrome,” which is a settler tendency to cast their decolonizing gaze to faraway places and provide token support (e.g. tax deductible donations, affixing a bumper sticker to their car in a show of “solidarity” etc.) for distant self-determination movements rather than focus on local Indigenous struggles; Second, it **counters the politics of distraction by centering Indigenous peoples and their relationships to homelands in the discussion**; Third, it **occurs both in formal and, more often, informal settings**; and Fourth, it **compels accountability a**nd action to counter contemporary colonialism and to make amends to Indigenous peoples. What does insurgent education look like in practice? One example comes from O’ahu, Hawai’i, which is visited by over 4.5 million people each year. Most of these tourists congregate at the hotels and beaches in Waikīkī, which was once known for its taro fields and natural springs. In 1998, Gaye Chan and Andrea Feeser launched a public art project that challenged tourists to recognize that they are on Kanaka Maoli (Native Hawaiian) homelands. Appealing to the consumerism of Waikīkī tourists, Chan and Feeser’s souvenirs are touted as an “authentic piece of Waikīkī’s past.” In reality they are selling small chunks of concrete wrapped in plastic accompanied by a historic timeline of colonial encroachment and destruction of Waikīkī. Additionally, tourists are invited to take an online tour of historic Waikīkī and enter the website as either Kanaka Maoli (Native Hawaiian), Kama’aina (Native-born) or Haole (White settler). This anti-colonial reality tour raises awareness of contemporary Kanaka Maoli struggles as well as promotes the idea that “Another Waikīkī is possible.” It is an effective insurgent education project for “unsettling the settler within.” Another instructive example is the 1677 Treaty of Middle Plantation between Mattaponi, Pamunkey, and the Commonwealth of Virginia. The Pamunkey and Mattaponi have been upholding the terms of that treaty for the past 300 years. Every year they go to the Governor’s mansion and bring a tribute (usually deer or geese) right to the foot of the stairs. These Indigenous peoples are demonstrating that the terms of the treaty continue to be upheld in their homelands by their communities. Continuing these practices are important to inspire and remind people that the agreements we make as Indigenous peoples are sacred and we uphold them. Actions like these could also spark a resurgence of treaty-making agreements between Indigenous nations to deepen alliances, protect Indigenous peoples crossing borders and regenerate old trade networks. Insurgent education takes several forms, such as the Dakota Commemorative Marches, uses of Haudenosaunee passports and diplomacies, and the Anishinabek Nation outlawing the use of the term “aboriginal.” The thought of Indigenous peoples mobilizing to reclaim their histories and their homelands makes settlers very uncomfortable. Yet, it is through this discomfort that meaningful cross-cultural education, awareness and action can take place. An insurgent educator calls for new solidarity movements with local Indigenous nations and finds innovative ways to assist in their resurgence efforts. According to Shuswap leader George Manuel, “We will steer our own canoe, but we will invite others to help with the paddling.” By helping with the paddling, insurgent education is about making one’s research priorities directly relevant and centered on the needs of local Indigenous communities. This is a challenge to Indigenous intellectuals and others who want to act in solidarity to become ‘warriors of the truth,’ both inside and outside the classroom. When we renew our responsibilities to defending and regenerating Indigenous land-based and water-basedcultural practices, we can move from insurgent to resurgent Indigenous people.

#### **The alternative is to reject the aff’s settler project of astronomy as a form of resurgent refusal**

Maile 19 ~David Uahikeaikalei'ohu, Assistant Professor of Indigenous Politics at the University of Toronto, "Resurgent Refusals: Protecting Mauna a Wākea and Kanaka Maoli Decolonization," Hūlili: Multidisciplinary Research on Hawaiian Well-Being, Vol. 11, No. 1, pages 59-66~ recut apark 2/13/21

Second, kia‘i Brannon Kamahana Kealoha has openly criticized the TMT and Mailani Neal, a young Kanaka Maoli wahine (female), for creating a pro-TMT petition. Publicized on social media and further narrativized through news media, Kealoha’s remarks asserted Neal should be “dealt with blows” (Walden, 2015)—a serious threat of physical violence. It is curious, as an informative anecdote, that my invocation of this story for analysis has been dismissed and silenced by some scholars, including a reviewer of this particular article. Let me be clear here. I am not suggesting that kia‘i in the movement to protect Mauna a Wākea, or Kānaka Maoli at large, be generalized, essentialized, or universalized as patriarchal, misogynistic, or sexist. To make such an interpretation would be a gross misreading. Kealoha’s remarks, unfortunately, demonstrate how patriarchal domination and gendered violence have been rhetorically justified as a way to protect Mauna a Wākea. This, quite simply, should not be tolerated. We should not shy away from or compromise this point, nor should it be dismissed and silenced. Calling attention to these forms of hewa does not weaken our claims and movement but rather strengthens them in profoundly intersectional ways. It is as both Coulthard (2014) and Simpson (2014) assert: Indigenous peoples’ decolonization requires gendered justice. Any heteropatriarchal violence in the movement to protect Mauna a Wākea must be abolished. Resurgent refusals provide a grounded project to guide non-statist practices of decolonization. As such, my theoretical contribution intervenes into both Hawaiian studies and critical Indigenous studies. By utilizing makawalu as a Kanaka Maoli method of discourse analysis, and by utilizing a selectively promiscuous methodology of queer-Indigenous-anarchism, the arguments in this article provide preliminary answers to Goodyear-Ka‘ōpua’s (2011) question, “how do we unsettle settler state authorities, without replicating the violences and exclusions we aim to stop?” (p. 132). And in theorizing resurgent refusals as a non-statist form of decolonization by examining Kanaka Maoli activisms against astronomy-industry development, this article has engaged and intervenes within Coulthard’s (2014) and Simpson’s (2014) arguments for Indigenous resurgence and refusal. However, I do not intend to highlight these interventions over contributions by kia‘i resurging and refusing the TMT on the ‘āina. And the fight is not over. This is especially true since construction still threatens to begin. My main hope is that this article can offer a guide, or blueprint, for resurgent refusals in the name of kia‘i and for Mauna a Wākea. From the deployment of de-occupation rhetoric to decolonize Mauna a Wākea, to the corporeal refusals of blockades on the ‘āina interrupting flows of settler colonial capital, protection of Mauna a Wākea elucidates how the politics of refusal and resurgence coalesce. Yet, as I have attempted to demonstrate, refusals of the TMT that re-center settler state law, remain neutral to astronomy-industry development, separate Indigenous decolonization from nationalist de-occupation, and bolster colonial heteropatriarchy, undermine resurgence against the settler state. Although queer-Indigenous-anarchism enables us to read these recuperations of settler colonial state power, we must continue to interrogate how decolonial movements for sovereign futures can be co-opted. Only when anti-state critiques within Indigenous movements are genuinely anti-colonial, anti-capitalist, anti-racist, and anti-sexist can decolonization manifest. While Mauna a Wākea signifies such a possibility, we must remain self-critical, coalitional, and altogether steadfast.

#### We control uniqueness – colonial exploitative dynamics overdetermine conceptualizations and policy surrounding space

Koren 20 [ Marina Koren Staff writer at Atlantic 9/17/2020“No One Should ‘Colonize’ Space” https://www.theatlantic.com/science/archive/2020/09/manifest-destiny-trump-space-exploration/612439/]//aaditg

Even if Martians aren’t going to protest our arrival, space exploration presents plenty of other opportunities for the exploitative dynamics of the colonial era to reemerge. Colonial-era travel spread invasive species across the planet; space-era travel could seed earthlings all over the solar system. Last year, for instance, an Israeli spacecraft crash-landed on the surface of the moon and spilled several thousand dehydrated tardigrades, microscopic animals that can survive extreme conditions. The creatures had been snuck aboard by a space entrepreneur who was only supposed to contribute a DVD-size compilation of human knowledge. “Technically, I’m the first space pirate,” he said when news of the stowaways was revealed, much to the horror of space lawyers and planetary-protection researchers. Connecting colonial language to space travel also helps shore up expansionist behavior on Earth: For the past six years in Hawaii, astronomers and local protesters have been locked in a standoff over the construction of a new telescope near the site of Mauna Kea, on land that native Hawaiians consider sacred. Read: The Thirty Meter Telescope and a fight for Hawaii's future “It’s a real failure of imagination to just keep recycling really harmful language and saying that it doesn’t matter because space is somehow different,” says Lucianne Walkowicz, an astronomer at the Adler Planetarium, in Chicago, and the organizer of the 2018 Decolonizing Mars conference. “We are still human beings, even if we go to space.” If astronauts are the elite of space workers, in the future a less powerful class could form, and language associated with exploitation and domination could make those people that much more vulnerable. “The use of this language can give policy makers and decision makers excuses to do bad things because it’s in the name of these really lofty things,” Divya Persaud, a planetary scientist at University College London who has written about the meaning of language in space domains, told me. Asteroid miners, for instance, would be dependent on their faraway employers for health care, safe working conditions, and, quite literally, life support. Oversight can be dicey when your operations are millions of miles away from the only planet with regulatory agencies (that we know of). People are drawn to sweeping rhetoric, wrapped up in fate and higher purpose, because it offers romantic ways of thinking about places they’ve yet to visit. But bringing God into space exploration, as the concept of manifest destiny does, complicates the issue even further. “It does hurt. This idea of It’s provenance; it’s inspired by God—they are taking it out of a human aspect and saying, ‘Hey, we’re being led by something else, something that’s greater than we are,’” Herrington says. “Take ownership and responsibility for what you’re doing. Don’t say somebody else is making us do it.” The way past manifest destiny and other colonial-era language can be simple: Be specific. Just as crewed is a more accurate word than manned, other phrases could easily sub in for the more outdated ones. “Instead of trying to say ‘settlement on Mars’ or ‘colony on Mars,’ why don't we just say, ‘We sent 12 astronauts to Mars?’” Persaud said. Melvin, who is Black, suggested pitching space exploration as something to benefit all humankind, not just the United States. He’s seen Earth as it truly is, a borderless place set against the boundless darkness of space. “You’re watching the world below you while you’re breaking bread with French, German, Russian, Asian American, African American [astronauts]—people from all around the world working together as a team,” Melvin said. “And you know that if Yuri does something wrong, or I do something wrong, or Peggy does something wrong, we can all die.” American leaders have, at times, sold space exploration as an international effort, as a boon for all humankind, as a push for scientific discovery. But in the U.S.—and Russia and China and India and other spacefaring nations—space travel is still a nationalist project. This spring, when NASA launched astronauts from U.S. shores for the first time in nearly a decade, the agency’s leaders pointed out, over and over, that the job was done by “American astronauts on American rockets from American soil.” And the next people to go to the moon, NASA officials have emphasized, will be Americans, and so will the first visitors to Mars. Language matters. When presidents speak of the country’s spirit and its space program in the same breath, when they yoke America’s strength to its feats beyond Earth, they end up describing the nation both as it exists today and as they imagine it in the future. By borrowing from a time when the dominant philosophy staked out American land for white settlers at the expense of the people who already lived there, Trump shows his hand about whom he believes the future of this country is for, whether here on Earth or on worlds beyond.

### 2

#### Interp: The affirmative must correctly tell the negative which aff they will be reading, including any and all changes, at the time of the online flip result.

#### Violation: screenshots – they refused to give me the aff at the flip

#### Negate:

#### 1~ Prep and clash - they force us to spend pre-round prep prepping multiple different affs which means I’m unprepared to engage - that decks clash and fairness. Also forces us to make a flip decision in the dark since we don't know if the aff is new or one of the 6 across your teammate’s wikis proven by you doing exactly that

#### 2~ Academic integrity – you hide the aff for your own advantage which is the definition of being academically disingenuous. That’s a voter since it destroys the constitutive purpose of debate as an educational activity.

#### 3~ No offense for disclosure bad - they posted cites on the wiki for all their affs but didn't give us the correct aff at the flip - the only offense was us not being able to anticipate or prep the right aff pre round because they forced us to split our time and make a flip decision without knowing the aff - proves any responses are in bad faith

#### Evaluate disclosure before 1AR theory – a) scope of norming – affects more rounds over time so it rectifies more abuse, b) magnitude – the aff advocacy and disclosure affects a larger portion of the debate since it determines every speech after it and pre round neg prep, c) any 1nc abuse was justified by the aff not being properly disclosed

#### 4 – this is their own shell – they read this before and played tricks with disclosure at the flip – vote against them

Graphical user interface, text, application

Description automatically generated

## Case

### Framing

#### Justifications of extinction-level impacts are simultaneously self-justifying and self-defeating – the moralistic call to stave off proximate impacts result in endless imperial aggression and mass atrocities, all of which only make global destruction more likely

**Pasquinelli 18** (Sydney Pasquinelli, Faculty in the Department of Communication at the University of Pittsburgh, 2018, *The Lesser-Evils Paradigm for Imagining Islam: U.S. Executive Branch (Re)framing of Islam in the Early Cold War Era of Racialized Empire-Building*, PhD Dissertation, <http://d-scholarship.pitt.edu/33906/1/Pasquinelli%20-%20Dissertation.pdf>, pp 156-161) gz

Lesser-evil reasoning is used in “practical conflict-situations where a greater evil can only be avoided when a lesser evil is caused or permitted.” 30 The basic logic behind any lesser-evil justification is the same: if we are required to choose between two evils, we ought to choose the lesser-evil.31 Lesser-evil reasoning plays an important role in liberal democracy: frequently employed by political philosophers and scientists, politicians, and lawyers, its application influences outcomes of democratic processes like criminal trials, domestic policies, and foreign policies including wartime allowances.32 In *The Lesser Evil: Political Ethics in an Age of Terror*, Michael Ignatieff encapsulates one of the oldest questions in republican politics: “What lesser evils may a society commit **when it believes it faces the greater evil of its own destruction?**”33 To answer this question, governments and their constituents must employ utilitarian logic to calculate aggregate risks and rewards. An exemplary lesser-evil justification was provided by the US military under **Truman**, in it**s decision to drop two atomic bombs on Hiroshima and Nagasaki**. It reasoned that the lives saved by the bombing, and its subsequent cessation of the war, outnumbered the deaths it caused. The decision was therefore justified because it thwarted a greater-evil.34 **While lesser-evil reasoning emerged as a predominant feature of liberalism, it has roots in Christian theology**.35 Some ethico-political traditions are guided by moral absolutes, or “absolutely exceptionless moral norms whose violation is intrinsically evil.”36 In an absolutist framework, lesser-evils (like nuclear war) cannot be rationalized; an act that is evil is wrong without qualification and must never be performed.37 But even theologians understand that moral universals place significant limitations on leaders, especially in times of warfare.38 In *Doing Evil to Achieve Good: Moral Choice in Conflict Situations*, Richard McCormick and Paul Ramsey explain that whether a theological system permits lesser-evil acts depends on “the moral relevance and decisiveness of the distinction between what is *directly intended* and what is only *indirectly intended* or actively *permitted*.”39 Those sympathetic to lesser-evil reasoning find the distinction significant: an act of evil which is directly intended can never be justified; but an act of evil which is indirectly intended, or permitted because of circumstance, is qualitatively different and thus possible to excuse on moral terms. McCormick summarizes centuries of Catholic moral thought as tolerating evil only when “a proportionately grave reason for allowing evil to occur” exists. In such cases, “the resultant evil [is] referred to as an ‘unintended byproduct’ of the action, only indirectly voluntary and justified by the presence of a proportionately grave reason.”40 *Jus ad bellum*, or just war theory, notarized by a community of scholars wherein theologians played a significant role, is premised upon the principle of proportionality: that the total benefits of war must outweigh the total harms.41 The post-colonial condition demanded **rhetorical calculations of proportionality to justify imperial meddling in the politics of the post-colonies**. In *The Least of All Possible Evils: Humanitarian Violence from Arendt to Gaza*, Eyal Weizman shows that **in the context of benevolent hegemonic leadership**, application of lesser-evil reasoning requires a **constant policing of the world in order to measure and determine the relativity of evils**.42 Liberal state apparatuses partake in a form of governmentality, in which they **presume the inevitability and necessity of militarized presence in the post-colonies** and then pursue the path of engagement they have calculated to produce “the best of all possible worlds,” or the optimum permutation of good and evil. 43 In a 1978 lecture at the Collège de France, Michel Foucault firstly defines governmentality as: “The ensemble formed by the institutions, procedures, analyses, and reflections… that allow the exercise of… [a] form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security.”44 The divine law and order which had undergirded colonial power was substituted by a **marketplace of good and evil**, in which **ethics were determined by a “vulgar pragmatism”—what works must be right!** 45 In *Covering Islam*, Said confirms the supply-and-demand-based production of dominant US discourse, revealing how images of Islam are used by the government and media to forward the US agenda. Within this framework, Islam “is not an interlocutor but in a sense a commodity.”46 **Covert and overt moves to distinguish the good or legitimate Muslims from the bad or inauthentic confirm the endurance of the colonial presumption of the *manageability* of Muslim populations**. The image of Western management, however, had transformed from a natural right into a liberal responsibility. To recruit Muslim allies, the US executive branch and its network of intelligence agents assumed the mantle of ***interpretive authority* over Islam**.47 Foucault distinguishes sovereign authority from governmentality in noting the latter is practiced primarily by “employing tactics rather than laws, and even of using laws themselves as tactics— to arrange things in a way that… such-and-such ends may be achieved.”48 Whereas colonial powers impose laws upon colonies, post-colonial governments enact a series of tactical measures upon post-colonial allies and enemies.49 Interpretive authority combined with military and economic prowess gave inescapable force **unilateral US executive branch tactics**. These measures included **economic and political manipulation, “psychological warfare,” and military basing or intervention**.50 Pertaining to the outcomes of lesser-evil governmentality, Ignatieff asks: **“Is there no moral limit to what a republic can do when its existence is threatened?”**51 When a society feels vulnerable to a great force (X), the logic of lesser-evils may permit that society to take **any unethical action short of (X).** **If (X) is extinction, great injustices (like nuclear warfare) may be vindicated in the name of winning a war or saving humanity**. 52 While Ignatieff remains confident in the checks and balances of liberal democracies, which he claims are “all guided by a constitutional commitment to minimize the use of dubious means—violence, force, coercion, and deception—in the government of its citizens,” many scholars are less faithful. 53 In *The Just War Myth: The Moral Illusions of War*, Andrew Fiala criticizes the US government for **exaggerating threats in order to skew utilitarian risk-calculus** and justify its violations of *jus ad bellum* and *jus in bello*.54 For example, the “existential” threat conjured by the Bush administration in its War on Terror **made the 2003 preemptive invasion of Iraq, as well as the use of illegal surveillance and interrogation tactics, more palatable to the American people and to US Congress**.55 Gordon R. Mitchell and Robert P. Newman interpret the War on Terror as a revival of Cold War logic; in both cases, **the construction of a singular and existential threat to Western humanity justified an extended period of heightened US military presence and police powers**.56 **Threat construction, lesser-evil reasoning, and hegemonic aspirations combine** in postcolonial US discourse to produce a “state of exception,” **whereby a sovereign power (usually the executive branch) is granted authority to suspend the laws and moral norms that dictate liberal (geo)politicking** *only* to confront an emergency.57 But when the crisis spans decades, **the “state of exception” becomes the norm**, often solidifying itself institutionally.58 Some scholars disapprove of the lowering of moral standards facilitated by lesser-evil reasoning. Mamdani blames the rise of Islamist terrorism in the twenty first century on US promotion of low-intensity conflicts and guerilla warfare, or “terrorism by another name,” in the late Cold War era.59 Hannah Arendt foreshadowed the blowback of the Cold War in her 1950 essay “The Eggs Speak Up,” where she condemned the US strategy to prop up (friendly) tyrannies and dictatorships as part of a broader strategy of defeating totalitarianism. Arendt advocates a “radical negation of the whole concept of the lesser-evil in politics, because far from protecting us against the greater ones, the lesser-evils have invariably led us into them.”60 **Lesser-evil reasoning gives policymakers a convenient method to gain legitimacy for foreign and domestic policies that constituents would normally (under non-emergency conditions) object to on moral and/or legal ground**

### Astronomy

#### DSCOVR solves flares – provides 15-60 minute warning

National Environmental Satellite Data and Information Service, Department of Commerce, no Date

https://www.nesdis.noaa.gov/current-satellite-missions/currently-flying/dscovr-deep-space-climate-observatory

Home Current Satellite Missions Currently Flying DSCOVR: Deep Space Climate Observatory FacebookTwitterLinkedInRedditShare Logo for the DSCOVR Mission - Deep Space Climate Observatory. NOAA NASA USAF The Deep Space Climate Observatory, or DSCOVR, was launched in February of 2015, and maintains the nation's real-time solar wind monitoring capabilities, which are critical to the accuracy and lead time of NOAA's space weather alerts and forecasts. Without timely and accurate warnings, space weather events—like geomagnetic storms—have the potential to disrupt nearly every major public infrastructure system on Earth, including power grids, telecommunications, aviation and GPS. The DSCOVR mission succeeded NASA's Advanced Composition Explorer's (ACE) role in supporting solar wind alerts and warnings from the L1 orbit, which is the neutral gravity point between the Earth and Sun, approximately one million miles from Earth. L1 is a good position from which to monitor the Sun, because the constant stream of particles from the Sun (the solar wind) reaches L1 up to an hour before reaching Earth. From this position, DSCOVR can typically provide 15- to 60-minute advanced warning before a storm of particles and magnetic field, known as a coronal mass ejection (or CME), reaches Earth. DSCOVR data also helps improve predictions of geomagnetic storm impact locations. Our national security and economic well-being, which depend on advanced technologies, are at risk without these advanced warnings.