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The Fight for Mauna Kea

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The Fight for Mauna Kea

Question: Should the Thirty Meter Telescope (TMT) be built on Mauna Kea?

Methods:

I am an astrophysics major, and as such follow several astrophysicists on social media. I read through many of the articles they posted, positive or negative. I also sought out native Hawaiian voices, particularly in relation to the ways in which Mauna Kea is sacred. This led me to several published papers on native Hawaiian traditions regarding Mauna Kea.

For the accompanying drawing I used artwork depicting the volcano goddess Pele as references. I also referenced several pictures of the summit of Mauna Kea to get a better idea of how to draw the mountain.

Introduction:

Mauna Kea, often translated as “White Mountain”, is the tallest mountain on the Big Island and is currently stewarded by the University of Hawaii (Institute for Astronomy: University of Hawaii, n.d.). In native traditions and prayers, it is known as Mauna a Wākea, “the Mountain of Wākea” (Maly and Maly 2005, 7). The mountain is the sacred first-born child of Wākea (the heavens), who also fathered the native Hawaiian people (Fujikane 2019). According to native Hawaiian tradition the summit of Mauna Kea is the dwelling place of the gods, who are physically embodied in the geographic features of the mountain (McCoy and Nees 2010, 2.20).

Because these gods are also embodied in the heavens, some experts in traditional Hawaiian practices may have been used for kilo hōkū (observing and discerning the nature of the stars), despite a lack of specific references in historical literature (Maly and Maly 2005, 95). One such individual noted that “before the observatories were there [on Mauna Kea], they had one when all the stones were piled up, kind of similar to some of the heiau (temples) at Mahukona” (McCoy and Nees 2010, 2.48). Cultural practitioner Kealoha Pisciotta disagrees with the claim that there is a lack of evidence of traditional Hawaiian astronomical observations. On her auntie’s instructions she visited lake Wai’au near the summit, “Because when you look into the lake, the whole heavens are reflected in it and it’s just like the gourd that they carry on the canoe [for navigation by the stars]” (McCoy and Nees 2010, 2.48). Her auntie also described solstice alignments with Mauna Kea, leading her to believe that the solstices were marked from the summit. For this reason, Pisciotta is concerned that parts of the summit have been levelled for observatory domes that obstruct viewing (McCoy and Nees 2010, 2.48).

There are currently 13 operational telescopes on Mauna Kea, and plans to build another further threaten the sacred mountain. The proposed Thirty Meter Telescope (TMT) would be 180 feet tall, have a footprint of 5 acres, and require the removal of 1,782,000 cubic feet of earth from the mountain (Fujikane 2019). There have been ongoing protests against construction on the sacred mountain since it began in April 2015, leading to dozens of arrests (Fujikane 2019). In December 2015 the Hawaii Supreme Court ruled that TMT’s construction permit was invalid, but in a second hearing in 2018 the TMT permit was affirmed (Tmt.org, n.d.). Opposition to the telescope is largely based on the belief that Mauna Kea is sacred and should be protected, and protests continue at the base of the Mauna Kea Access Road (Fujikane 2019).

Discussion:

As mentioned previously, resistance to the construction of TMT is based in the idea that building telescopes on Mauna Kea is destroying native Hawaiian cultural heritage. However, I did find that some native Hawaiians, such as Chad Kalepa Baybayan, disagreed. Baybayan believes that the telescopes on Mauna Kea are a continuation of native Hawaiian astronomy and teach younger generations about discovery and exploration (Johnson 2014). He added that denying this is “the highest level of desecration” (Johnson 2014). I find this to be consistent with Laurajane Smith’s definition of heritage as “a cultural process that engages with acts of remembering that work to create ways to understand and engage with the present, and the sites themselves are cultural tools that can facilitate, but are not necessarily vital for, this process” (2006, 44).

I do not believe Baybayan makes a very strong case, however. There are other ways to continue the tradition of astronomical observation that do not involve destroying parts of the mountain that are integral to continuing other traditions. Pisciotta’s ability to track the solstices will still be impacted. The Mauna Kea view plane is also vital to native Hawaiian heritage unrelated to astronomy. Tita Elizabeth Kauikeōlani Ruddle-Spielman related that her uncle could predict an unfavorable change in the wind by watching the clouds over the mountain, saying “that is very important, this whole idea of line of sight, cultural landscape. So not only is [the summit of Mauna Kea] important close up on top, but as viewed from afar” (McCoy and Nees 2010, 2.49). I agree with Smith that physical sites are not always necessary for the heritage process, but I believe that in the case of Mauna Kea the physical features are vital. Destroying them has a direct impact on native Hawaiians’ ability to engage with their heritage.

I believe it is a disregard for native Hawaiian heritage that has led non-native scientists to continue pushing for the construction of TMT on Mauna Kea. Many proponents of TMT regard

protesters as anti-science and find their religious beliefs laughable (Johnson 2014). I am reminded of a clip from the Indian Child and Welfare Act hearings wherein a government official commented that the removal of native children was America attempting to apply white, middle-class standards to a foreign culture (Mazo et al. 2018). Non-native scientists seem to have difficulty comprehending the fact that a foreign culture, such as that of native Hawaiians, could have different values than their own. They then conclude that the natives are irrational and must be taught the value of scientific discovery (Johnson 2014).

This skewed evaluation of the situation by outsiders is very familiar. When English colonists were first settling in what is now the northeastern United States, they assumed local leaders called sagamores acted as monarchs. In reality, they only spoke for the community consensus (Piotrowski 124). The assumption of monarchy allowed the colonists to justify wresting large swathes of territory from indigenous bands once they had a signature from a single sagamore, who did not think of land ownership in the same sense as the English (Piotrowski 124). A similar scenario has played out with Mauna Kea, with the University of Hawaii playing the part of sagamore. The university is the steward of the mountain and is supposed to act with respect for native Hawaiian beliefs (Institute for Astronomy: University of Hawaii, n.d.). Accepting the university's consent for the construction of Mauna Kea while ignoring the outcry of those directly affected is just more colonial theft of indigenous land and culture.

I find this whole conflict to be rather ridiculous anyway, as TMT could just be built elsewhere. José Manuel Vilchez, an astronomer with Spain's Higher Council of Scientific Research and a former member of the scientific committee of the Astrophysics Institute of the Canary Islands, noted that the island of La Palma is only a minor downgrade. The lower altitude

will also reduce the cost of construction and maintenance, and the vast majority of inhabitants support the astronomy work (Jones 2019). John Mather, who won the Nobel Prize in Physics in 2006 and is the senior project scientist for NASA's James Webb Space Telescope, believes that "data from the Webb telescope can be combined with information from other Earth-based telescopes to compensate for the infrared advantage that Mauna Kea has over La Palma" (Jones 2019). Avi Loeb, chair of Harvard University's astronomy department commented that "one thing that you need to keep in mind is that humans can change the system as to compensate for the slightly worse conditions [on La Palma]. In the end, it might perform as well or maybe even better." He further argued that while Mauna Kea is a slightly better site, La Palma is "an excellent site, so there would be exceptional science done there" (Jones 2019). Spain has granted a permit for TMT to be built on La Palma, but it is still considered an alternate site as construction moves forward on Mauna Kea (Tmt.org, n.d.).

Conclusion:

Given the evidence, I believe that La Palma is a perfectly good location for TMT or any other telescope. Most, if not all, scientific deficits can be recovered through the use of space telescopes, which I know from my astrophysics research to be capable of great scientific discovery. Perhaps most importantly, construction on La Palma does not involve the desecration of a site deemed sacred by those who live there. I feel there is no justification for building any telescope on Mauna Kea when there are other excellent options that come without controversy and heartache. Therefore, I believe construction for TMT on Mauna Kea should be abandoned in favor a La Palma, and no more construction should be done on the sacred mountain.

The Drawing:



I was inspired to draw a man standing atop a personified Mauna Kea to represent how non-native scientists are trampling native Hawaiian heritage. Mauna Kea is upset and distressed, but the man pays no heed as he makes his observations of the stars. I dressed the man in colonial-style clothing to connect these scientists to colonizing explorers who often abused indigenous peoples. Explorers such as Christopher Columbus and Lewis and Clark are revered for their intrepidity, so I

wanted to undercut that idea with Mauna Kea's anxious expression.

I had found some references that used masculine pronouns for Mauna Kea, but opted for the gender-neutral sources. This is because I wanted to make the mountain into a person like many of the goddess Pele's depictions. I used her face as reference as well to more accurately portray a native Hawaiian person. I also referenced Mauna Kea itself, specifically covered in snow to match its moniker of 'white mountain'. I made their hair white to match the snowy peaks. The top of their head is based off the snow-covered craters on the mountain, where a ring of black volcanic rock can be seen through the snow at the edges.

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