

Mr. Richard Howard
Senior Program Executive
Office of Space Sciences/Code SD
NASA Headquarters
300 E. Street, SW
Washington, DC 20546

Aloha Mr. Kumor,

The Royal Order of Kamehameha I would like to thank you for this opportunity to comment on the Draft Environmental Assessment for the Outrigger Telescope Project- Mauna Kea, Moku O Keawe. The extension granted by your agency allowed us to prepare our comments in accordance with the protocols to which we are bound as chiefs.

To ensure a thorough review of the document, we commissioned Mauna Kea Anaina Hou to research the issues addressed in the draft assessment. Although it is a legal requirement that environmental reviews be written in language easily understood by the average person, the criteria used by your agency to comply with that part of the law did not take the average Native Hawaiian into account. With the help of Mauna Kea Anaina Hou, we were able to understand the issues within our own, cultural, context. To this end, we strongly support the inclusion of this group in the 106 consultation process pursuant to the National Historic Preservation Act regarding your project.

The Royal Order of Kamehameha I was founded in 1865 by His Majesty King Kamehameha V in accordance with the principals by which Kamehameha I ruled the Hawaiian Islands. Like all things Hawaiian, the organization was deeply affected by the aggression of western culture and suffered through a period of quiet oppression. At the same time, it has maintained a continuity that makes its role in modern politics unique. The Royal Order of Kamehameha I (ROOK 1) takes its charter to preserve and protect the resources of the Hawaiian people seriously and is currently involved in the process of asserting its authority to fulfill this sacred obligation.

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Mauna Kea is the highest and most renowned temple and Wahi Pana (sacred place of worship) of the Native Hawaiian people. Its summit region is known as Wao Akua - the sacred realm of the Creator. The significance of the Mountain is acknowledged in oral histories throughout all of Polynesia. It is the burial ground of our highest born and most sacred ancestors; it is a temple for worshipping Akua (Creator), Na Akua (Divine Deities), and Na Aumakua (the Divine Ancestors).

For the last 32 years, astronomy has existed on our sacred mountain - Mauna Kea. Indeed, with the largest telescopes ever built occupying the Mountain, it has become known as the world's premiere astronomy center.

Since 1968, when the development first began, there has been resistance from the people of Hawaii. It must be recognized however, that this world-class astronomy center was built against the wishes of the Native Hawaiian people and with no recognition of Mauna Kea's significance to them as Hawaii's host culture. The recent University of Hawai'i Master Plan proposal, which promotes further development, generated adamant public outcry from all sectors of the community. Resistance, therefore, has not waned.

Although the sacred nature of Mauna Kea has been recognized by the State Historic Preservation Office (SHPO) through the identification and listing of the summit region as an Historic District and the summit cluster of cinder cones as an Historic Property, no Section 106 consultations pursuant to the National Historic Preservation Act were ever conducted for the any development on Mauna Kea that used federal funds. Further, the Section 106 consultations conducted for the proposed development have been woefully inadequate.

Concerns Regarding the Section 106 Consultation Process

The ROOK I would like to express concern regarding the Section 106 consultation process pursuant to the National Historic Preservation Act being conducted by your agency. In February (2-1-2001) of this year NASA conducted meetings which were to include the Hawai'i Island Burial Council (HIBC), The Office of Hawaiian Affairs (OHA), the Royal Order of Kamehameha, and the Department of Hawaiian Home Lands (DHHL), State of Hawai'i Historic Preservation Office (SHPO) and referred to these meetings as Section 106 consultations.

While the ROOK I was prepared to attend these meetings and participate in the process, the restrictions imposed on the first meeting by your agency, at the eleventh hour, contravened the protocols to which our organization is bound and defied the spirit of the law that mandates the consultation process. As a result, we could not participate. Although the extension of the comment period was a step in the right direction, this situation can not be remedied until NASA adopts ground rules that honor the order's protocols. Within these protocols, the order has the authority to convene a process that is inclusive and allows for participation at the grassroots level. Neither the University of Hawai'i, nor their selected representatives, can speak for the Hawaiian people. The people speak for themselves and their chiefs listen. While NASA obviously operates on the premise that government is obligated to listen to the people but is free to dismiss their concerns, the chiefs who comprise the Royal Order can not.

In the winter of last year, the ROOK I conducted a culturally appropriate public hearing on the issue of developing Mauna Kea. We take this

opportunity to bring forward that, in comparison, the process your agency is conducting is not appropriate; and further, that the results of NASA's process cannot be construed to be the results of a Section 106 consultation process.

To date, the process is incomplete. Until such time as the federally mandated Section 106 process proceeds, the public record stands. The Native Hawaiian community, in all hearings regarding both the Mauna Kea Master Plan and your agency's project, has expressed adamant opposition to any further desecration and or development of the Mauna Kea summit or slopes.

In concurrence with the mandate given by the Hawaiian people, the Ali'i Nui and Grandmaster of the Royal Order of Kamehameha 1, Gabriel Makuakane, has decreed that "There shall be no further development of any kind on Mauna Kea."

The ROOK I does not believe the Section 106 process being conducted by your agency is inclusive enough to identify and mitigate the impacts this project will have on a sacred, historical, traditional and cultural property.

Concerns Regarding the NASA Draft Environmental Assessment for the Outrigger Telescope Project

A review of the document produced many concerns regarding significant impacts to the traditional, cultural, religious and natural resources of Mauna Kea; These concerns are outlined in the response included below.

endangered species, existing burials and the wealth of natural and cultural resources occurring on Mauna Kea.

9 NASA has failed to justify the need for expansion or further development.

The Weikiu Bug Mitigation Plan

In the days of old when the chiefs and konohiki determined that any species was being overtaken a kapu was placed upon that species until it recovered. Under this kapu system no one was allowed to touch that species; violation of the kapu was punishable by death.

"According to the Kumulipo (Chant of Creation), before man was created all other living things were created. When the process of creation was complete the gods too were complete and walked the Earth with man. It is believed that all living things, no matter how big or small, have purpose and make the complete whole. When a living thing ceases to exist than the process of creation is unbalanced and begins to unravel."

Testimony by Kealoha Pisciotto - HIBC Commissioner

The Weikiu bug population has been diminished by 99.7% in just 14 or 15 years leaving a population that is 0.3% of the original. These numbers demand serious and immediate response and recovery efforts.

on page 63, the Draft EA states: "The causes of -the Weikiu bug population decline are not known." It is established that any loss of habitat of a species eventually impacts that species negatively. On page C-1 of its Weikiu Bug Mitigation Plan, Pacific Analytics states "it is the intention and hope ... that the Weikiu bug population will actually increase, due to protection and restoration of potentially favorable habitat." The theory

Behind this proposed plan, to create a new habitat and hope the Wekiu bug will go there and survive, is flawed for **two principal** reasons:

- 1.) There is no empirical data outlining what the bugs' behaviors are and how they might respond to the creation of a new habitat, and
- 2.) the test would be done in parallel with the construction, which will destroy the bugs' original habitat.

It is both just-and reasonable that, until further study is conducted and hard data produced (and verified) to prove that the Wekiu would respond to such a theoretical model, we err on the side of caution. The ROOK I is unable to accept a theoretical model that could, in and of itself, diminish the whole species.

- There is no compensation for extinction.
- There is a difference between experimentation and mitigation.
- There is no evidence that NASA's proposed mitigation plan would save the Wekiu bug.
- ROOK I does not support the Wekiu Bug Mitigation Plan as presented in the Draft EA. Clearly the plan fails to address the minimum standard of protection for a species in need of maximum protection. We request that a Federal Environmental Impact Statement pursuant to NEPA be conducted to further evaluate this precious and rare species.

Sacred Landscapes and Visual Aesthetics

Na Pu'u

The Pu'u (cindercones) of Mauna Kea are sacred... they are sacred because they mark certain celestial events and because they are the divine kinolau (body forms) of the deities and they mark important events recorded in the genealogies. Changing the surface and digging into these cinder cones is an act of desecration and alters the landscape of Mauna Kea. This desecration prohibits Native Hawaiians' ability to read the celestial signs and desecrates the divine deities. This desecration has occurred for over 32 years.

"When you talk about digging in the earth, we talk about Pele, Poli'ahu, we talk about for our Native Hawaiians that's our blood. That's the same thing as our physical body."

Testimony by Keolalani Hanoa - HIBC Commissioner

"The telescopes ... are actually an obstruction of sight. Now when our kahuna go up there, they cannot turn 360 degrees and see all the places... they have to walk around the telescopes and that's inappropriate."

Testimony by Kalehua Eaton

Visual Aesthetics

The visual vistas cannot only be evaluated from the ground view looking upward but must also include the perspectives from the summit area itself. Further, these evaluations cannot ignore the Native Hawaiians' relationship to the sacred landscape.

Alterations to the sacred landscape of Mauna Kea promote, change and impedes our traditional and cultural practices.

- Alterations to the sacred landscape destroy reference points critical to the potency of Native Hawaiian oral traditions. No one has the right to change our genealogies.
- ROOK I does not support any further alterations to the landscape and view planes of Mauna Kea.

Hydrology, Hazardous Materials and Solid Waste Containment Systems.

Hydrology - WAIWAI - Water

The nearest term to wealth in the Hawaiian language is waiwai. The word for water in Hawaiian is wai. This relationship shows the cultural respect and importance the Hawaiian people attributed to water and its essence.

The divine Kanekawaiola, revered in the traditions as the creator and protector of all fresh water, holds a special place in the traditions of Mauna Kea because of the "waters of life" generated there. Poliahu, although best known for her snowy kinolau (divine manifestation and bodily forms), is also of the water.

Contemporary Native Hawaiian practitioners' journey to the Mountain to gather its healing waters. This water is used for medicine, blessings and cleansings and is valued because of its purity. As the snow and ice melt, they become part of a system of underground, inland, shoreline and deep ocean waters that all originate atop Mauna Kea. Hawaiian oral histories document the extent to which Hawaiians understood and valued this important resource. It is said that water from Mauna Kea runs- through the ancient 'auwai' systems (waterways for taro irrigation) that are still preserved in Hilo today.

The Draft EA states (pg. 93) "On-site construction and installation of the proposed project, including the potential for a hazardous substance spill, would not impact ground water resources

Mauna Kea is a distinct aquifer system that is linked to other separate, but related, aquifer boundary systems. The East and West Mauna Kea aquifer systems alone produce a sustainable yield of 409 - 444 million gallons per day (mgd). The Mauna Kea aquifer boundary systems also feed the Kohala (at 154 mgd) and NE Mauna Loa (21-56 mgd), SE Mauna Loa (291 mgd), SW Mauna Loa (130 mgd), and NW Mauna Loa (740 mgd) aquifer systems. (*N.B. please see Atlas of Hawaii by Juvik and Juvik, third edition.*)

These aquifer systems are fed by a complex combination of hydrological effects that originate from the summit and move downward. These effects include, but are not limited to, shallow subsurface streams, high level springs, the diurnal fog precipitation that occurs throughout the year, the freeze and thaw cycles of buried fossil ice (found a few feet below the surface), permafrost, snowmelt and even rainfall.

While Lake Waiau is the most prominent surface water feature on the Mountain, there are numerous smaller ponds found in the summit cinder cones formed from perching. These also feed the subsurface streams.

The Mauna Kea aquifer systems, subsystems and general hydrology contribute to nearly the entire island of Hawai'i- not only is the hydrology complex, it is massive.

Although the Draft EA does mention the basal waters contained far below the summit region, it ignores the fact that these basal systems are part of the larger hydrological systems of the Mountain. While it may seem that the known surface streams occurring 1000-2000. ft. downstream from the summit development are safe from contamination in the event of hazardous spill, there is no data to support this assumption. According to the Draft EA, the percolation rate for water is 20 inches per hour downstream, if this is true, it would take approximately 52 days for contamination to reach these streams. It is possible contamination would not reach the streams at all; but this cannot be determined from the information provided in the Draft EA.

- The Draft EA does not address the complex nature of the hydrology of Mauna Kea, nor does it adequately address the significant and cumulative impacts the proposed project would have on the cultural and environmental resources of Mauna Kea.

Hazardous Materials

The Mauna Kea Anaina Hou has brought to our attention two very important concerns regarding hazardous materials and solid-waste systems.

In March 2000, in consultation with NASA, the Hawaii Island Burial

.Council expressed concern regarding the use of hazardous materials, including but not limited to, mercury, ethylene glycol, and hydraulic fluid. At that time, the HIBC requested from NASA a full disclosure of "...the hazardous materials, including the amounts, safety precautions, and waste disposal..." (*N.B. Please see HIBC March 2000 minutes*) used at the WMKO facility. To date they have not received this information. The ROOK I first became aware of this issue at the March meeting, and we are alarmed that NASA. has not **responded to the HIBC's** request.

The Draft EA states (pg.69) "There have been no mercury spills at the WMKO." The ROOK I is in receipt of a letter from the WMKO Director Dr. Fred Chaffee which is addressed to Nelson Ho of the Big Island Chapter Sierra Club and cites that mercury spills did, in fact, occur on two separate occasions in 1995

(*N.B. Please see attached letter from WMKO*). These Inconsistent or conflicting reports do not engender trust in this process, as far as ROOK I is concerned.

The Draft EA does provide a much more comprehensive list of the hazardous materials usage, handling, storage and disposal. The Draft EA however, does not provide information on an emergency plan or a disaster plan as is required by OSHA. Nor does it list the reportable quantities of all materials (i.e. according to the State Department of Health the reportable quantities of Mercury are 11b). The amount of Mercury used by the WMKO is 30lbs according to the EA.

- What are the emergency response plans and the disaster response plans for elemental Mercury and other hazardous materials?

The Draft EA states, "It is common practice for concentrated hazardous substances to be diluted by WMKO headquarters staff and disposed of by a licensed waste-handling contractor."

...and these licensed contractors.

- By whom are they licensed?

It is our understanding from the Draft EA that this license permits the removal and disposal of the following compounds (for which you have listed both the amounts disposed of and reportable quantities used):

- 1.) Aluminum Chloride,
- 2.) Aluminum Sulfate,
- 3.) Copper Chloride,
- 4.) Copper Sulfate,
- 5.) Potassium Hydroxide.

We have no information on carbon disulfide

- What are the reportable quantities of this substance?

We understand that carbon disulfide is added to the residual compounds produced as waste from the aluminum removal process. **We understand that this is done to "heavy out" the biologically active copper in the "rinse water", so that it will not enter the waste water system and may be removed as a solid waste from the septic tank.**

Regarding the elemental mercury, in spite of existing policies, elemental mercury could still be accidentally introduced into the wastewater system if the rubber ring guide containing the mercury was to be punctured or burst as a result of some unforeseen event. We presume that any open drains on the observation deck below the telescope would communicate directly or indirectly with the wastewater drainage system.

Furthermore, mercury spilled on the observing and basement floors could enter the opening where the earth ground wires enter the cinder layers. It should be noted that there is no specific antidote for mercury poisoning. A lethal dose is irreversible. Policies do not prevent accidents, nor do they prevent natural disasters.

- The Draft EA does not adequately address the hazardous materials used for this project, nor does it adequately address the existing and potentially significant and cumulative impacts this project might have on the cultural and environmental resources of Mauna Kea.

Wastewater Collection, Treatment and Disposal

Although Mauna Kea is sacred in its entirety, the summit holds a special status. The disposal of human waste and hazardous waste on the summit profanes the sanctity of the land.

"When Mauna Kea started up there, I asked Nelson Ho of the Sierra Club, when he goes up that mountain find out where all of the human waste is going. All the waste you folks have up there is going right into our sacred land, our sacred place, our sacred wahi pana..."

Testimony by A untie Pe/e *Hanoa*

"We derive a super sense of spirituality and enlightenment from this place (Mauna Kea) ... We also bury our highest born there."

Testimony by *Mauna Kea* - State Parks Program
Coordinator

'The Mountain is a burial site. There are many bones placed there.'

Testimony by *Mr Ed Stevens*

"That whole Mountain is a cemetery."

Testimony by *Auntie Hanah Reeves*

Mauna Kea is a burial ground. Known burials exist there. The fact that no evidence of disturbance has been produced doesn't change the fact that it is a burial ground - the absence of evidence is not evidence of absence. **The thought of** human wastewater and toxins flowing over the bones of our Hawaiian ancestors is outrageous and is desecration of the highest order.

Because Mauna Kea summit resides in a Conservation **District**, the WMKO wastewater disposal system must be in compliance with the State Health Department regulations for this District. The Draft EA states "The WMKO wastewater disposal system has been approved by the State Department of Health." The State Wastewater regulations however, forbid any substances other than human and regular waste from entering the septic tank systems. State of Hawai'i Clean Water regulations require any project that is 5 acres or greater to obtain a National Pollutant Discharge Elimination System (NPDES) permit.

- Does your agency have a special permit to introduce hazardous substances into the wastewater system?
- Does your agency have a NPDES permit?

The Draft EA states "Wastewater enters the two-stage septic tank where bacteria digest bio-solids that settle to the bottom of the tank. The wastewater then flows from the septic tank into a 6-m (20ft.) deep seepage pit that drains into deep subsurface cinder."

- Could you define or describe this seepage pit? For instance, is this "pit" an open hole in the ground or a lined and contained vault?

In the event that any hazardous materials other than the "rinse-water" from the aluminizing process were to be introduced into the septic/seepage tank system, what emergency procedures have been established to deal with this scenario? For example, what would the procedures be if mercury were introduced into the system through the open drain system?

The high altitude and freezing conditions create special problems in systems that might, under normal circumstances, be fine.

- Have the sanitation systems been inspected since they were put in?

What is the date of the last sanitary system inspection, **and who conducted this** inspection and what technology was used? It is common in **many states for sanitation** systems to be inspected using **video inspection technology**.

Why was this method of waste disposal selected over complete removal of all waste materials from the Mountain?

- The Draft EA does not disclose the Emergency Response and Disaster Response Plans for this project. To date, we have no proof of compliance and have seen no documentation of inspection reports or evaluations by the pertinent agencies.

The Draft EA does not adequately address the Hydrology, Hazardous Materials and Solid Waste containment systems for the Project, which can, and do, significantly impact the traditional, cultural and environmental resources of Mauna Kea.

Summary

In summary, we believe that the Draft EA does not adequately address or mitigate the significant impacts that will be incurred by this project, for the following reasons:

- The Draft EA does not justify why further development is needed.
- The Draft EA Wekiu Bug Mitigation Plan is in direct violation of the traditional practice for species protection and could result in the extinction of the species.
- The Draft EA does not consider traditional rights to gather pristine water resources on the slopes and summit of Mauna Kea. Further, by diminishing the complexity of the Mountain's hydrology, the mitigation measures do not adequately address the project's significant and cumulative impacts and can not protect the resources that, by birthright, belong to the Native Hawaiian people.
- The Draft EA does not fully evaluate the hazardous materials that would be used by the project. The proposed mitigation measures for handling such materials are therefore inadequate and incomplete.
- The Draft EA does not adequately address the impact of solid waste disposal on traditional beliefs and sensibilities regarding the sacred nature of the Mountain and defecation as an act of desecration.
- The Draft EA does not address the cultural significance of **the landscape** and therefore the mitigation measures do not address the **significant impacts** and loss of cultural and traditional use of this landscape.

Conclusion

The ROOK I position has already been articulated regarding further development. However, in order for your agency to be in compliance with it's only laws a full Environmental Impact Statement (EIS) is required. We concur with the Office of Hawaiian Affairs, Hawai'i Island Burial Council, the Native Hawaiian Community and the general public that the impacts outlined in the assessment are significant and worthy of a more in-depth review. We also look forward to the opportunities for public input the EIS process affords.

We are in agreement with Mr Chaffee's statement "...how we proceed in the future is far more important than what has happened in the past."
(N.B. please see attached Mr. Chaffee's letter to Sierra Club dated - Feb. 13, 2001).

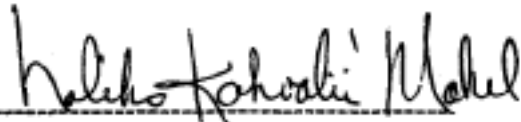
If your agency wishes to move forward and not repeat the omissions, failures, and mistakes of the past, then you must embrace the true Spirit of Aloha, in which protocol demands that everyone take responsibility for your actions now and in the future.

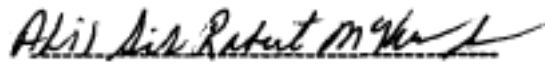
The Environmental Impact Statement would be a first step and is an essential part of that future.

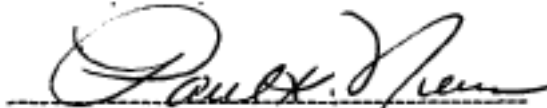
An EIS would pay minimum homage to the spirit of Aloha by providing a minimum standard of protection. It is our hope that the efforts at this juncture will be those that raise the -standard -of Aloha, by providing the maximum protections for all parties concerned.

Aloha,
On behalf of the Royal- Order of Kamehameha I Moku O Mamalahoa,

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Kua'uhau Mamo Naliko Markel


Kaka'olelo Ali'i Sir Robert McKeen Jr.


Ali'i Aimoku Ali'i Sir Paul Neves K.G.C.K.

a

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*N.B. This report was commissioned by the Royal Order of Kamehameha I Moku O Mamalahoa Heiau O Mamalahoa Helu'Elua, and compiled by Mauna Kea Anaina Hou, any use of the information of this report must obtain express written consent of the above mentioned bodies.



The W. M. Keck Observatory

California Association for Research in Astronomy

Frederic H. Chaffee Director

Mr. Nelson Ho
Sierra Club, Big Island Chapter
32 Kahoa Street
Hilo HI 96720-2206

Dear Nelson:

February 13, 2001

Thank you for your letter of January 22, 2001, regarding the proposed Outrigger Project and for expressing your concerns regarding "old business." Thank you, too, for meeting with Rolf- Peter Kudritzki and me on February 2 to discuss these concerns and to explore with us positive ways to move forward to avoid future distrust and misunderstandings.

As to the specifics of the two events about which you expressed concern:

1. Work stoppage during Keck I construction because bones were unearthed: I am perplexed regarding the date of purported work stoppage at the Keck I construction site as "sometime in 1991," since the site work for Keck I began in August 1985, and was completed in October 1986. Similarly, Keck II site work wasn't begun until July 1992, and was completed in October of the same year. Thus, 1991 was a "quiet" construction year on the Keck site. Nevertheless, I had our archivist search our monthly records for the entire periods of Keck I and Keck II construction to see if there was reference to any work stoppage for any reason. The only reported stoppages were due to weather; nowhere did I find any reference to stoppages for any other reason.

I also called Jerry Smith, the then-Project Manager for the Keck Observatory, who retired in 1996, asking him if he remembered any report of bones or any other archaeologically significant artifacts, having been unearthed during the construction of the observatory, and he was emphatic that no such events were ever reported either orally or in writing.

In light of this investigation, I feel as certain as I can, given that the reported event occurred 10 years ago--5 years before my arrival in Hawaii--that no bones or other significant artifacts were unearthed during the construction of the Keck Observatory. I sincerely hope that this matter can be put firmly to rest.

2. Mercury spill in 1995: This report has more substance, as two mercury spills did occur during the cleaning and realuminization process for the Keck II secondary mirror which uses a mercury-filled "bladder" for its support in the telescope (a very standard support technique used at many observatories).

A. The mirror or must be removed from its support when it is realuminized, and when this was done on August 10, 1995, a minor spill (about a teaspoon) occurred from the bladder in the summit aluminizing room. According to the written report by our safety officer after the incident, "Approximately three quarters of a teaspoon were suctioned by aspirator into a plastic container and small residual amounts stuck to dust and debris were collected and disposed of in an appropriately marked container. A mercury absorbent paste was then spread over the entire spill area and beyond for about two feet, then removed. Mercury detectant powder was then spread and checked two days later: no residual traces of mercury were evident." As is our standard practice, the collected hazardous material was disposed of by Unitek Environmental of Honolulu.

B. On September 15, 1995, in the process of reinstalling the secondary mirror into the Keck II telescope, when the Hg bladder was receiving its final "top-off," at least 100 ml of Hg was spilled from the bladder vent tube onto the floor of the secondary mirror module. Cleanup, with crews fully suited and masked appropriately, took several days because of the many nooks and crannies in the module. In all, 100 ml were recovered, collected in an appropriate container, and disposed of by Unitek Environmental of Honolulu.

As a result of lessons learned during this episode, our Emergency Response Plan for dealing with mercury spills was carefully reviewed and rewritten. It is mandatory that all personnel handling the secondary mirror during future realuminizings be orally briefed on these procedures, read them carefully, and follow them to the letter.

I hope this information is helpful to you and the Sierra Club. Rest assured that we take these matters very seriously at the Observatory.

As I expressed to you in our meeting, I believe that how we proceed in the future is far more important than trying to reconstruct or pin blame for past events. Since the abovementioned events, the Directorships at both Keck and IFA have changed hands. As I also mentioned, I am a lifetime Sierra Club member, and Rolf Kudritzki's affiliation with the Green Party goes back many years. This means we both share, at a very deep level, a respect for and determination to protect the environment on Mauna Kea, both physical and cultural. The thoroughness with which we propose to protect both is, I hope, evident by the very stringent controls we put forth in the Federal Environmental Assessment for the Outrigger Telescopes Project.

Let us all pledge that the new millennium will be a time of collaboration between the Observatories, the Sierra Club, Native Hawaiians and all others concerned with the sanctity of Mauna Kea. I am determined that the Outrigger Telescopes Project will serve as a model of such a collaboration.

Aloha,



Frederic H. Chaffee

f-Peter Kudritzki



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July 23, 2001

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RE: Draft Environmental Assessment for the Outrigger Telescopes Project

Dear Dr. Howard:

Thank you for the opportunity to respond to the draft environmental assessment for the Outrigger Telescopes Project. The Office of Hawaiian Affairs is mandated to serve as the coordinating agency for the State in responding to actions affecting Native Hawaiians (Chapter 10, HRS). As such we have previously communicated with NASA on November 16, 2000, as regards NASA's on and off site mitigation plans. Our comments in this letter will address the cultural impacts of NASA's proposed Outrigger Telescopes Project and the shortcomings of NASA's work in preparing this EA thus far.

NASA's proposed environmental assessment provides ample evidence that this project will have a significant impact on traditional and cultural properties, on a proposed National Historic Site, on the endangered wekiu bug, and on scarce groundwater resources to warrant the preparation of an EIS.

February 22, 2001

NASA's Proposed Mitigation Is Irrelevant to the Harms Caused to Traditional and Cultural Properties.

The EA documents the importance of Mauna Kea to Hawaiians (pp. 72-81), including legends of Mauna Kea, the importance of place names in Hawaiian culture, specific important landscape features, burial sites, and cultural sites (such as the adze quarry).

The following concerns regarding Mauna Kea are identified in the EA:

- Maintaining the sacred quality of the summit.
- Lack of respect on the part of the astronomy program for Native Hawaiian cultural practices.
- Increased public use of the summit.

However, none of the mitigation efforts proposed in this EA actually address the harms identified and provide little protection to Native Hawaiian traditional and cultural properties. Further, because NASA's mitigation plans are vague and ambiguous at best, they seemingly vest NASA with unfettered discretion as to how and when to mitigate and cause us to question the actual effect this project will have on the summit.

In particular:

- > The current consultation process is inadequate to provide necessary community input for a mitigation plan.

NASA recommends consultation with "Native Hawaiian groups to identify methods of protecting traditional and cultural resources" (p. 105) yet thus far has allowed only four Native Hawaiian groups to participate in its National Historic Preservation Act (NHPA) 106 consultations, even though many more seek inclusion. Furthermore, NASA has limited public comment at meetings held in Hawai'i (Feb 5, 7, 2001) despite widespread interest in this project. Given the importance of the decisions to be rendered and the concerns voiced in the Native Hawaiian community about the manner in which consultations have occurred thus far, we question the efficacy of future consultations, NASA's ability to consult in good faith, and the relevancy of the proposed mitigation recommendations.

- > NASA is not in compliance with the Mauna Kea Master Plan, even though NASA cites the Plan as part of its mitigation measures.

NASA claims it has taken measures to reduce the potential area of development on Mauna Kea in response to community requests when, in fact, these measures are mandated as part of the Mauna Kea Master Plan. The Master Plan also limits future development on the mountain to no more than five telescopes yet the proposal by NASA is for six telescopes. If NASA is going to represent to the community that it is in

compliance with the Master Plan, then it should abide by all of the Master Plan's provisions, including the requirement of a limitation on future development.

NASA has failed to adequately consider alternative proposals.

NASA is required to review alternative proposals under the NEPA process. While NASA did review alternative venues for these telescopes, it did not consider fewer outriggers as an alternative.

NASA has failed to adequately evaluate the no-action alternative.

NASA did not adequately evaluate the no-action alternative in comparison to the significant impacts this project would cause to the Native Hawaiian community. The importance of finding other life forms is never discussed and evaluated against the needs of life forms in Hawai'i, nor is the long-term cost of losing the ability to practice one's culture evaluated against the short-term loss of construction dollars. While NASA searches for other life forms in space, it is ironic that its search may extinguish an entire species of the wekiu bug here on earth.

NASA has failed to address this project's impact through its proposed on-site cultural mitigation recommendations.

The on-site mitigation proposals are of little value given that they seem to have been developed prior to an adequate assessment of this project's impacts. Assuming, for the sake of argument, that NASA has adequately defined the impacts of its proposal, OHA requests additional archaeological monitoring, the hiring of a cultural monitor to assure construction protocols are established and enforced consistent with the Native Hawaiian culture, the briefing of supervisory staff before construction begins on the significance of Mauna Kea to Native Hawaiians and their culture, more input into NASA's construction plans, and the ability to evaluate NASA's on site mitigation plan in a timely fashion and to suggest needed changes. (For a more detailed discussion of this item, please review our letter to NASA of Nov. 16, 2000).

NASA has failed to address this project's impact through its proposed off-site cultural mitigation recommendations.

The off-site mitigation suffers from the same fate as the on-site mitigation plan inasmuch as it, too, seems to have been developed without an adequate assessment of this project's impacts. The proposal is conceptual in nature and provides little substance to which the community can react. It also contains no nexus to the impacts it purports to mitigate. While education* maybe an appropriate mitigation, how does it mitigate

appropriate compens

for the loss of sacred viewplanes, or the ability to maintain traditional practices? The vagueness of the off-site mitigation plan shows that much more community involvement is needed before adequate mitigation for the adverse cultural impact can be assessed by

the Native Hawaiian community or by NASA. (For a more detailed discussion of this item, please review our letter to NASA of Nov. 16, 2000).

NASA has failed to mitigate against the possible extinction of the Wekiu Bug.

OHA questions efficacy of using an untested mitigation procedure to protect the nearly extinct wekiu bug. Rather than adopt a speculative procedure which maybe of little or no value in protecting the wekiu bug, OHA suggests NASA relocate outrigger telescopes 2 and 3 or eliminate these outriggers altogether.

NASA has failed to address the significant impact of its wastewater collection, treatment and disposal proposals on Native Hawaiian cultural practices and beliefs.

The EA proposes to dispose of wastewater at Pu'u Hau 'Oki cinder cone, a place believed by Native Hawaiians to be the residence of the goddess Poli'ahu and the sacred burial place of ancient Hawaiians. NASA's proposed disposal practice is disrespectful to the beliefs of Native Hawaiians, defiles Native Hawaiian ancestral remains, and demonstrates a callous disregard for Native Hawaiian beliefs. The EA should assess this disposal practice as a significant impact and mitigate its effects by transporting all wastes to an off-mountain waste repository.

NASA has failed to adequately assess impacts of this project on hydrology and water quality.

The EA suggests there is no groundwater under Mauna Kea, yet local residents can trace streams and auwai flowing from the mountain, thus indicating the presence of groundwater reserves underlying Mauna Kea. NASA must evaluate the effect of its proposed activities on these underground natural water reservoirs by accomplishing a more thorough hydrological and water quality review. Until NASA takes adequate steps to define those water resources jeopardized by this development, no adequate assessment or mitigation is possible.

NASA has failed to assess the cumulative effects of this project.

NASA has stated that this project will have no cumulative effects in relation to other projects on Mauna Kea because no funds are available for development over the next five years. This conclusion is shortsighted because of its limited time frame and, is inconsistent with the Mauna Kea Master Plan, intended to guide development on the mountain over the next 20 years. Until this project is evaluated within the context of the Mauna Kea Master Plan, NASA has not addressed its role in articulating the cumulative effects of development on Mauna Kea. Furthermore, the site-specific cumulative impacts of Keck I and Keck II on Puu Hau Old have never been evaluated even though construction has been completed.

NASA must complete a full EIS under applicable environmental laws.

Based upon the known significant impacts of this project and the lack of adequate and relevant mitigation measures, OHA urges NASA to prepare a full EIS to discover and assess all possible impacts early in the planning process and to ensure the environmental review includes adequate community input. To do otherwise, is to circumvent the spirit of our environmental laws and to cause irreparable harm to a place sacred to Native Hawaiians.

The Ninth Circuit Court of Appeals recently observed that ". . . the relevant NEPA timing regulations, the plain language of the act, and applicable precedents All unequivocally require NEPA analysis to be undertaken early enough so that it can. serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made." Metcalfe v. Daly 214 F.3d 1135,1142 (9th Cir. 2000) (quoting 40 C.F.R. § 1502.5) (explaining that caselaw and the CEQ regulations require that environmental analysis under NEPA "must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made"); see also Weslands Water District v. U.S. Department of the Interior, 850 F. Supp. 1388 (E.D. Cal. 1994) (agency's -alleged unavoidable conflict between the secrecy and timing of ESA consultation and NEPA's requirements did not excuse failure to prepare an EIS).

Under NEPA, an agency must prepare an EIS for all "major Federal actions significantly affecting the quality of the human environment 42 U.S.C. § 4332(2)(C). The regulations promulgated by Council on Environment Quality establish criteria for determining when a full EIS is required: These criteria include:

* "Impacts that may be both beneficial and adverse. A significant impact may exist even if the Federal agency believes that on balance the effect will be beneficial," 40 C.F.R. § 1508.27(b)(1)

* "Unique characteristics of the geographic are such as the proximity to historic or cultural resources ... or ecologically critical areas," id. § 1508.27(b)(3);

* "The degree to which the effects on the quality of the human environment are likely to be highly controversial," id. § 1508.27(b)(4);

* "The degree to which the possible effects on the human environment are highly uncertain or involve unique and unknown risks," id. § 1508.27(b)(5);

* "The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration," id. § 1508.27(b)(6);

* "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts Significance exists if it is reasonable to anticipate at cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts," id. § 1508.27(b)(7);

* "The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources," id. § 1508.27(b)(8)

* "The degree to which the action may adversely affect -an endangered threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, id. § 1508.27(b)(9); and

* Whether the action threatens a violation of... requirements imposed for the protection of the environment, id. 1508.27(b)(10).

Given all that has been discussed in this letter and these criteria, there is no other reasonable conclusion - the impacts of this project (and the cumulative impacts of Keck I and 11) on sacred and important cultural resources are significant. See Colorado River Indian Tribes v. Marsh, 605 F. Supp. 1425, 1430 n. 3 (C.D. Cal. 1985) (EIS can be required based on impacts to cultural sites alone) quoting 42U.S.C. § 4331(b)(4)). (NEPA requires the federal government to "preserve important historic, cultural and national aspects of our national heritage"); 40 C.F.R. § 1508.8 ("Effects' include ecological . . . , aesthetic, historical, cultural, economic, social or health. . .")

In addition, impacts on the *Wekiu* bug also provide an independent basis for significance. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1213-14 (9th Cir. 1998) (Where Forest Service's EA did not show that no significant impact on area's fish populations would result from proposed. action, an EIS was required): Foundation for North American Wild Sheep v. U.S. Dept. of Agriculture 681 F.2d 1172, 1180 (9th Cir. 1982) (impacts to sensitive -species, the bighorn sheep, a significance factor requiring preparation of EIS).

Conclusion.

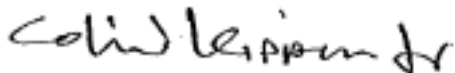
An EIS is warranted 1 because this project will have significant impacts on traditional and cultural properties, on a proposed National Historic Site, on the endangered wekiu bug, and on scarce groundwater resources.

OHA need not . . . prove that significant environmental impacts will occur, only that the project may cause significant degradation. See Blue Mountains Biodiversity Project v. Blackwood 161 F.3d 1208, 121-6 (9th Cir. 1998) ("An EIS is required ... whenever Mauna Kea EA

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February 22, 2001

If you have further questions, please call Pua Aiu, Policy Analyst at 594-193 1.

Sincerely,



Colin Kippen, Jr.
Deputy Administrator, Hawaiian Rights Division

cc: BOT
Administrator

'substantial questions are raised as to whether a project may cause significant [environmental] degradation' (quoting Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1149 (9th Cir. 1998), cert denied, Malheur Lumber Corp. v. Blue Mountains Biodiversity Project, 527 U.S. 1003 (1999); LaFlamme v. F.E.R.C., 852 F.2d 389, 397 (9th Cir. 1988) ("plaintiff need not show that significant effects will in fact occur;" an EIS is required "if substantial questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor") (citation omitted); Blue Ocean Preservation Society v. Watkins, 767 F. Supp. 1518 (D. Haw. 1991) (same).

I Na Kapuna O Hawai'i Nei Regarding Draft Environmental
Assessment for Outrigger Telescopes Project (December 2000)

April 10, 2001

Introduction

Hui Malama I Na Kupuna O Hawai'i Nei (Group Caring for the Ancestors of Hawai'i, "Hui Malama") was born in 1988 in response to the removal of over 1,100 ancestral Native Hawaiian remains from the sand dunes of Honokahua, on the island of Maui, prior to construction of the Ritz Carlton Hotel. Founded by Edward and Pualani Kanahēle, the principal focus of Hui Malama is the care and protection of ancestral Native Hawaiians and funerary objects by returning iwi (bones) and moepu (funerary objects) to their families, to replant them, and to provide perpetual care and protection for burial and reburial sites. Hui Malama members shall be well versed in ceremonial protocols relating to the treatment of ancestral remains, providing ceremonial reinternment services upon request, or as deemed necessary.

The secondary focus of Hui Malama is to seek the repatriation of sacred objects and cultural patrimony as part of an ongoing effort to assist with the renewal of traditional spiritual practices that recognize the need for the continued involvement of ancestors and ancestral deities in the daily lives of contemporary Native Hawaiians.

Furthermore, Hui Malama members shall teach their children the importance of caring for ancestral remains and the importance of the interdependence between the living and the dead for the purpose of insuring the protection of their bones and the perpetuation of the importance of the responsibility to malama i na kupuna.

The overall mission of Hui Malama is to restore and maintain the ancestral foundation of the Native Hawaiian people by assisting families to resume the historic responsibilities to care for the ancestors, to strengthen the sense of Hawaiian self-identity, and to perpetuate the Hawaiian race and culture.

Comments to Draft Environmental Assessment

Hui Malama understands that this draft environmental assessment (DEA) is different from the environmental assessment (EA) being prepared by the University of Hawai'i. Moreover, that the DEA is being prepared to support NASA's decision-making regarding whether to continue to fund the Outrigger Telescopes Project. Hui Malama therefore requests that it be sent the EA and allowed to comment on that document also. Due to the sacred nature of Mauna Kea, Hui Malama's ultimate recommendation with regard to the DEA and the EA is that a full blown environmental impact statement be prepared in order to properly assess the imperative impact to the cultural and spiritual resources of this important place.

Hui Malama understands that the two basic questions being asked in NASA's Origins Program is "where do we come from?" and "are we alone?" NASA in turn should understand that our oral history as recorded in chants in particular the Kumulipo provide Kanaka `O`iwi (Native Hawaiians) with layers upon layers of answers to questions about our origins that we find more than satisfies our own curiosity as to where we come from--we come from po, from ao and from Ha`loa. Given the current state of emergency that Kanaka `O`iwi find ourselves in with challenges to our federal and state programs and our very existence as a result of the illegal taking of our sovereign authority and lack of recognition by the United States and other international partners, we are compelled to set aside the question whether we are alone as being irrelevant to our very survival.

Hui Malama is intrigued by the statement that, "NASA, however, will not take final action on this Outrigger Telescopes Project until the decision-making process under NEPA has been completed. It is anticipated that on-site construction and installation would begin in mid-2001." The DEA is dated December 2000 and construction is anticipated for mid-2001, merely seven months following the issuing of the DEA which does not afford sufficient time for a complete and comprehensive review which would lead to proper decision-making under NEPA. There is already a clear indication by the agency that an environmental impact statement is unnecessary and that the consultation period will be brief and Kanaka `O`iwi concerns, no matter what they are, will be mitigated and if that is not possible, simply ignored. Hui Malama hopes this is not the case and an appropriate timetable is provided to fully assess all impacts.

The permanent nature of the proposed telescope structures is extremely troubling to Hui Malama. The existing Keck telescope structures and the disturbance it caused the `Aina and the people already degrades and undermines the sanctity of Mauna Kea. Keck serves the scientific interests of the world at the expense of the spiritual interests of Kanaka `O`iwi for whom these islands were created for by our deities and for whom Mauna Kea holds an important place in our spiritual psyche. We are again reminded that as the indigenous but colonized people of the pae `Aina, our

scientific, economic or both.

Some may argue that further consideration must be given to alternative sites for the Outrigger Project. The problem for NASA of course is that Native people in other parts of the honua (planet) probably attach similar sacred importance to elevated areas that meet NASA's project requirements. We know that this is certainly true at Mt. Graham in Arizona. Another way to look at this situation is to question the true importance of the two questions whose answers are being sought by NASA if to do so would first require desecration to the fundamental beliefs of living Native people and an undermining of their ancestral values. Think interplanetary balanced by the impacts locally. If the former outweigh the latter, than maybe the question is not that important.

Contrary to what is stated on page 8, the on site construction, installation and operation of the Outrigger Telescopes will-- not may-- result in environmental impacts including negative cultural, spiritual and historic impacts that can only be mitigated by not conducting any further construction at Pu`u Hau `Oki and the summit region or any other part of Mauna Kea and more importantly, by removing the current Keck Telescope and related structures. Hui Malama strongly disagrees that mitigation measures would effectively address the impacts resulting in an acceptable project. We respectfully urge NASA to respect the cultural traditions of Ka`naka `O`iwi and refrain from funding this project.

With respect to archaeological sites, although it is true that extensive impacts from the construction of Keck I and Keck II reduced the probability of discovering burials during proposed on-site construction activities associated with the proposed Outrigger Telescopes, it must be accurately stated that what was really reduced was the probability of finding in situ burial sites. Experience has shown Hui Malama, that construction related activities can result in the destruction of burial sites such that what is discovered after the activities are fragments of iwi kapuna (ancestral remains) spread throughout the project area. This tragic result has occurred despite the presence of archaeological monitors which is only to say that the presence of such monitors is not in and of itself a complete guarantee that iwi kapuna will not be negatively impacted and therefore desecrated.

In addition, the DEA needs to be corrected in that only the complete absence of Hawaiian burials or the failure to construct can truly "prevent the inadvertent disturbance of remains." By its very nature, an inadvertent disturbance is just that--- accidental. The presence of a qualified archaeologist will not prevent a bulldozer blade from cutting into a burial, or an excavator from ripping through iwi kapuna. The monitoring archaeologist can only halt the work once the iwi are negatively impacted. If the project has multiple excavations occurring that outnumber the archaeological monitors, then the effectiveness of mitigating impacts are greatly reduced. Absent from this proposed mitigation, is the lack of Hawaiian cultural expertise. The monitoring archaeologist will not have a doctorate degree and more often than not will not have a master's degree in archaeology. Moreover, the archaeologist will not be knowledgeable in Hawaiian cultural values and practices relating to malama i na iwi kapuna (care of ancestral remains). Inherent in the western view of historic preservation is the misguided believe that the utilization of an archaeologist addresses not only archaeological needs but cultural needs as well. This is simply untrue. While many archaeologists over the years have become much more aware of and respectful to Hawaiian traditions, this is not an adequate substitute for cultural expertise.

Although Hui Malama is unable to certify the statement that the proposed project "would have no impact on known archaeological sites," we raise a much more important point. Pu`u Hau `Oki is part of a larger cultural landscape whose sacred nature is a sum total of the condition of all of its parts. Hence, the sacredness is undermined by the current activities at the site and the proposed Outrigger Project.

Hui Malama agrees with the State Historic Preservation Division (SHPD) findings relating to this area of Mauna Kea and the determination that the proposed project will result in "adverse effects." We respectfully disagree with SHPD that these adverse effects can be mitigated. The cultural expertise possessed by SHPD Culture and History staff is acknowledged. However, the perspective of practitioners is separate and distinct from that of knowledge and awareness of such practices. Hui Malama is comprised of cultural practitioners especially our Kumu Pualani Kanaka`ole Kanahele who has repeatedly stated that Mauna Kea must be left in her natural state. As stated above, the current existence of the Keck I and II telescopes atop Mauna Kea undermines the mana (spiritual essence) of this wahi ku`puna. Therefore, any placement of additional structures only serves to further desecrate the mana of this sacred place.

There is a fundamental difference here which is somewhat systemic to the historic preservation process under federal law. The concerns Hui Malama raises herein are principally spiritual in nature. However, the proposed mitigation measures address only the physical realm and do not extend into the spiritual. Noise reduction, slope stabilization, prevention of accidental dispersal, etc. do not address the trauma and interference represented by the presence of a structure that is not intended to honor Mauna Kea, but instead seeks to have Mauna Kea serve it. The relationship is inverted and therefore from our perspective, subverted. Once again, the only effective mitigation measure to preserve the mana of Mauna Kea is not to proceed with the proposed project and to instead remove all existing structures off the mountain.

proposed project be answered on our sacred places. If the questions are that important to others, then part of the kuleana (responsibility) in seeking to answer those questions must be the responsibility to find a place that is suitable and does not offend fundamental spiritual beliefs of indigenous peoples like us—put the structures somewhere else.

In summary, Hui Malama urges NASA to adopt the no-action alternative for the reasons stated above.