
**Supplemental Cultural Impact Assessment
for the Proposed Advanced Technology Solar Telescope
(ATST) at Haleakalā High Altitude Observatories
Papa‘anui Ahupua‘a, Makawao District, Island of Maui**

TMK: (2) 2-2-07:008

**Prepared for
KC Environmental
and
The National Science Foundation (NSF)**

**Prepared by
Colleen Dagan, B.S.
Robert Hill B.A.
Tanya L. Lee-Greig, M.A.
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Wailuku, Hawai‘i
(Job Code: HALEA 2)**

May 2007

O‘ahu Office
Kailua, Hawai‘i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawai‘i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Report Reference	Supplemental Cultural Impact Assessment for the Proposed Advanced Technology Solar Telescope (ATST) at Haleakalā High Altitude Observatories Papa'anui Ahupua'a, Makawao District, Island of Maui TMK: (2) 2-2-07:008 (Dagan et al. 2007)
Date	May 2007
Project Number	CSH Job Code: HALEA 2
Project Location	Overall Location: Pu'u Kolehale, Haleakalā High Altitude Observatories (TMK [2] 2-2-07:008), as depicted on the USGS 7.5 minute Topographic Survey Map, Portions of Kilohana Quadrangle and Lualailua Hills Quadrangle. Preferred ATST Site Location: Mees Solar Observatory Facility Alternate ATST Site Location: Reber Circle
Land Jurisdiction	State of Hawai'i
Agencies	National Science Foundation (NSF) – Proposing Agency Association of Universities for Research in Astronomy (AURA) – Proposing Agency University of Hawai'i Institute for Astronomy (UH IfA) – Managing Agency U.S. Environmental Protection Agency (EPA) – Federal Reviewing Agency U.S. Fish and Wildlife Services (USFW) – Federal Reviewing Agency Department of Land and Natural Resources, State Historic Preservation Division (DLNR/SHPD) – State Reviewing Agency State of Hawai'i Office of Planning – State Reviewing Agency
Project Description	The National Science Foundation is proposing to build the Advanced Technology Solar Telescope (ATST) at the 18.166-acre Haleakalā High Altitude Observatories.
Project Acreage	0.60-acres
Region of Influence (ROI)	The area of direct affect is considered as the 0.60-acre site for the potential construction of the ATST. When contemplating both direct and indirect effects on the cultural and historic resources the ROI for this undertaking is defined as the entire summit area of Haleakalā.
Project Environmental Regulatory Context	As a federally funded project on state lands, this undertaking is subject to both Federal and State of Hawai'i Environmental Regulations. With regard to Federal regulations, this undertaking is subject to the National Environmental Protection Act (NEPA) 40 Code of Federal Regulation [CFR} Part 1500-1508, as well as the National Science Foundation's NEPA-implementing regulations 45 CFR Part 640. With regard to State of Hawai'i Environmental Regulations, this undertaking is subject to Hawai'i Administrative Rules (HAR) Title 11 Chapter 200-4(a) and Chapter 343 of the Hawai'i Revised Statutes (HRS).

Consultation Results and Cultural Impact Recommendation	<p>Based on the information gathered during the course of this study and presented in this report, the overwhelming evidence, from a cultural and traditional standpoint, points toward a significant adverse impact on Native Hawaiian traditional cultural practices and beliefs. This determination of significant adverse impact would apply to both the preferred Mees Location and the alternative Reber Circle location. To the majority of Native Hawaiians and non-Hawaiians who participated in the scoping, public comment, and overall Section 106 process, the proposed undertaking is unmitigable and therefore, following the “No Action” alternative and keeping both the Mees site and Reber Circle site in their current undeveloped state was strongly recommended.</p> <p>In the event that the proposed undertaking is approved and funding secured, it is highly recommended that more time for mitigative proposals be allotted and the development of working relationships with Native Hawaiian groups be actively pursued. As Haleakalā plays a central role in the history and culture of Maui Island <i>kanaka maoli</i> it is imperative that there be open lines of communication and that every effort is made to hear, understand, and respect the cultural concerns and beliefs of the community during the course of project construction, as well as throughout the operational time span of the facility itself.</p>
--	--

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 PROJECT BACKGROUND	1
1.2 SCOPE OF WORK	1
1.3 ENVIRONMENTAL SETTING	2
1.3.1 Natural Setting	2
1.3.2 Built Setting	5
Section 2 Methods	6
2.1 DOCUMENTARY RESEARCH	6
2.2 COMMUNITY CONSULTATION	6
Section 3 Traditional and Historic Background	7
3.1 TRADITIONAL ACCOUNTS OF HALEAKALĀ	9
3.1.1 Legends of the Demi-god Māui as Related to Haleakalā	14
3.1.1.1 A Description of the Demi-god Māui by Kalakaua (1888)	14
3.1.1.2 Stories Collected by Taylor (1870)	15
3.1.1.3 Legends Collected by Fornander (1919)	16
3.1.2 Legends of the Goddess Pele as Related to Haleakalā	17
3.1.2.1 The Arrival of Pele in Hawai‘i by Kalakaua (1888)	17
3.1.2.2 Pele Legends Collected by Fornander (1919)	18
3.1.2.3 Pele Legends Collected by Westervelt (1916)	18
3.1.2.4 A Description of the Powers of Pele by William Ellis (1826)	18
3.1.2.5 A Description of Pele’s Journey to Hawai‘i by Forbes	21
3.1.3 Other Traditional Descriptions of Haleakalā	21
3.1.3.1 A Description of the ‘Ua‘u Bird in Kalakaua (1888)	22
3.1.3.2 Haleakalā in Mele [music] and Oli [chants]	24
3.2 PRE-CONTACT SETTING	24
3.3 EARLY HISTORIC ERA TO THE LATE-1800’S	25
3.3.1 An Expedition by Missionaries William Richards, Lorrin Andrews and Jonathan S. Green to the Summit of Haleakalā (1828)	25
3.3.2 The U.S. Navy Exploration of Haleakalā by Cmdr. Charles Wilkes (1841)	27
3.3.3 Government Survey of Haleakalā by William DeWitt Alexander (1869)	28
3.3.4 An Ascent of Haleakalā by C.F. Gordon Cumming (1881)	29
3.3.5 U.S. Geological Survey of Haleakalā by Clarence E. Dutton (1883)	30
3.4 THE PROJECT AREA IN THE TWENTIETH CENTURY	32
3.4.1 Geological Survey by Harold T. Stearns (1942)	32
3.4.2 Military Use of the Haleakalā National Park	33
Section 4 Archaeological Research	36
4.1 FIRST ARCHAEOLOGICAL SURVEY OF HALEAKALĀ BY EMORY (1921)	36
4.1.1 Haleakalā Group	36
4.1.2 Pu‘u Naue Group	37
4.1.3 Burial <i>Ahu</i> in Kamoā O Pele	37
4.1.4 Halāli‘i Group	38
4.1.5 Pa Pua‘a o Pele Group	39

4.1.6 Hanakauhi Group.....	40
4.1.7 Mamani Group.....	40
4.1.8 Kihapi‘ilani Road.....	41
4.1.9 “Dante’s Inferno” Group	41
4.1.10 Keahuokaholo Group.....	41
4.1.11 The ‘Ō‘Ō Group	42
4.1.12 Keonehe‘ehe‘e Trail Group	42
4.1.13 Wai Kapalaoa Shelters.....	42
4.1.14 Hunter’s Cave Terraces	43
4.1.15 Lā‘ie Group.....	43
4.2 OTHER ARCHAEOLOGICAL STUDIES	43
Section 5 Scoping Meetings and Section 106 Testimony	45
5.1 ANALYSIS AND SUMMARY OF PUBLIC TESTIMONIES AND FORMAL LETTERS.....	83
5.1.1 Opposition to the Proposed Advanced Technology Solar Telescope (ATST)	83
5.1.2 Support for Proposed Advanced Technology Solar Telescope (ATST).....	83
5.2 PETITIONS SUPPORTING AND OPPOSING ATST	84
5.2.1 Cultural Implications of Petitions	86
Section 6 Community Contacts and Consultations.....	87
6.1 SUMMARIES OF INFORMAL INTERVIEWS.....	94
6.1.1 Ms. Walette Pelegrino	94
6.1.2 Mr. Leslie Kuloloio	94
6.1.3 Mr. Hinano Rodrigues	95
6.1.4 Mr. Brian Jenkins.....	95
6.1.5 Ms. Roselle Bailey.....	95
6.1.6 Mr. Charlie Lindsey.....	96
6.1.7 Dr. Alan Kaufman	96
6.1.8 Mr. Stanly H. Ki‘ope Raymond.....	96
6.1.9 Mr. Sam Ka‘ai	97
6.1.10 Mr. Kawika Davidson.....	97
6.1.11 Mr. Timothy Bailey	97
6.2 KAHIKINUI HOMESTEAD COMMUNITY MEETING	99
6.2.1 Mr. Norman Abihai.....	99
6.2.2 Ms. C. Mikahala Kermabon.....	99
6.2.3 Mr. Quintin Kiili.....	100
6.2.4 Mr. Aimoku Pali and Mrs. Lehua Pali.....	100
6.2.5 Mr. Earl Mo Moler	100
6.2.6 Ms. Donna Sterling	100
6.2.7 Ms. Chad Newman	100
6.3 MAUI COMMUNITY COLLEGE (MCC)-HAWAIIAN STUDIES PROGRAM	101
6.3.1 Kama‘āina, Student.....	101
6.3.2 Ms. Cheynne Sylva.....	101
6.3.3 Mr. Walter Kozik.....	101
6.3.4 Ms. Kathleen Zwick.....	101
Section 7 Traditional Cultural Practices.....	102
7.1 GATHERING FOR PLANT RESOURCES	102
7.2 TRADITIONAL HAWAIIAN SITES.....	103

7.3 TRADITIONAL HAWAIIAN BIRTH AND BURIAL PRACTICES	103
7.4 NATIVE HAWAIIAN AND CONTEMPORARY HUNTING PRACTICES	103
7.5 <i>WAHI PANA</i> (STORIED PLACE)	104
7.6 HALEAKALĀ AS A SACRED MOUNTAIN	105
7.7 PŌHAKU PĀLAHA-THE PIKO OF EAST MAUI	106
7.8 CULTURAL PRACTICES.....	107
7.9 IMPACTS ON VIEWPLANE	109
7.10 CEDED LANDS AND SOVEREIGN IDENTITY	110
7.11 HALEAKALĀ AS A TRADITIONAL CULTURAL PROPERTY.....	111
7.12 ECONOMIC CONCERNS	112
Section 8 Summary and Recommendations	113
8.1 RECOMMENDATIONS.....	114
Section 9 References.....	116
Appendix A ATST Petition – Unknown Origin	1
Appendix B Kilakila O Haleakalā Petition.....	1
Appendix C E-Mail and Letter Responses to Current Study Mail-Out Inquiries.....	1

List of Figures

Figure 1. Portions Kilohana (1983) and Lualailua Hills (1983) 7.5-minute USGS topographic quadrangles with project location indicated by blue shaded area.....	3
Figure 2. TMK (2) 2-2-07 showing loction of project area shaded in red.....	4
Figure 3. A portion of the Hawaiian Government Survey Map (Dodge 1885) showing Pōhaku Pālaha in relation to Pu‘u Kolekole.	8
Figure 4. Petition from an unknown distributor in support of ATST.	84
Figure 5. Kilakila O Haleakalā Petition A, opposing the proposed ATST atop Haleakalā.....	85
Figure 6. Kilakila O Haleakalā Petition B; opposing the proposed ATST atop Haleakalā with Section 106 Clause.....	86

List of Tables

Table 1. Summary of Traditions Related to Haleakalā.....	10
Table 2. Development Timeline atop Haleakalā.....	34
Table 3. Cameron Center - July 12, 2005.....	46
Table 4. Kula Community Center - July 13, 2005.....	47
Table 5. Pukalani Community Center - July 14, 2005.....	49
Table 6. Mayor Hannibal Tavares Community Center - March 28, 2006.....	51
Table 7. Paūkukalo Community Center - May 1, 2006.....	55
Table 8. Cameron Center - September 27, 2006.....	60
Table 9. Mayor Hannibal Tavares Community Center - September 28, 2006.....	69
Table 10. Kula Community Center - September 29, 2006.....	71
Table 11. Maui County Cultural Resource Commission - October 12, 2006.....	75
Table 12. Formal Letters.....	78
Table 13. Preliminary Results of Community Consultations.....	87

Section 1 Introduction

1.1 Project Background

At the request of KC Environmental, and on behalf of the National Science Foundation, Cultural Surveys Hawai'i, Inc. conducted a Supplemental Cultural Impact Assessment (SCIA) for the Advanced Technology Solar Telescope (ATST) Project atop Pu'u Kolehale, within Papa'anui Ahupua'a, Makawao District, Maui Island (Figure 1). The proposed action is for the construction, installation, and operation of the ATST at either the preferred Mees Location or alternate Reber Circle Location (see Figure 1) near the summit of Mauna Haleakalā and within the 18.166-acre University of Hawai'i Institute for Astronomy (IfA) Haleakalā High Altitude Observatories site (HO) [TMK (2) 2-2-07:008] (KC Environmental 2006:Section 1.1) (Figure 2).

This SCIA was performed in accordance with the guidelines for assessing cultural impacts as set forth by the Environmental Council of the Hawaii State Department of Health Office of Environmental Quality Control (OEQC) (Hawaii State Department of Health Office of Environmental Quality Control 1997) and is intended to supplement the existing Cultural Resource Evaluation (Maxwell 2006) included in the Draft Environmental Impact Statement (DEIS) for the proposed project (KC Environmental 2006). The primary purpose of this study was to widen community outreach and gather additional information on the traditional cultural property of Haleakalā as an additional means to assess the potential impacts of the proposed undertaking on Native Hawaiian traditional cultural practices and/or beliefs.

1.2 Scope of Work

The following scope of work served as the framework within which this study was conducted:

1. Additional background research regarding the historic preservation and OEQC regulatory framework for a project of this scope;
2. Substantial background research regarding the traditional and mythological setting for Mauna Haleakalā;
3. Additional background research, to supplement previously submitted materials, regarding the previous use, and modification of, the summit area;
4. Additional interviews or consultations which could include group meetings as well as formal and/or informal individual interviews (e.g. meetings with those living at Kahikinui, Kanaio, or Kaupō; consultation with Hawaiian cultural practitioners and organizations identified during the consultation process and commentary period; consultation with other parties to include the Friends of Haleakalā and other interested organizations);
5. An analysis and discussion of the criteria of eligibility of Haleakalā as a traditional cultural property (as mentioned in the October 23, 2006 State Historic Preservation Division/Department of Land and Natural Resources review letter, Log No. 2006-3502) will be analyzed, discussed and evaluated; and
6. Preparation of a supplemental report to include the findings from the additional background research, the results of additional community consultation, and an analysis of significance

and project effect in the context of the items listed above. This document would also address the review comments of the DEIS and incorporate the comments into the fabric of the report. All aspects of the cultural and historical significance of Haleakalā as a traditional cultural property will be considered in evaluating the project's cumulative impacts.

1.3 Environmental Setting

The proposed ATST Telescope site is within the 18.166-acre HO parcel and located near the summit of Haleakalā along the southwest rift ridge atop Pu'u Kolehale at approximately 9,940 feet above mean sea level (amsl). The tallest point of the mountain of Haleakalā is the top of a 300-foot tall cinder cone named Pu'u 'Ula'ula [Red Hill], located due east of Pu'u Kolehale, at 10,023 amsl.

1.3.1 Natural Setting

The natural landscape of the surrounding project area is dominated by hills of red cinder and basalt ejecta from eruptions that formed large cinder cones both within the crater and along rift zones to the northeast and southwest of the summit. Soils in the project area are classified as Cinder land ("rCl"), soils which predominate the landscape between 8,000 feet amsl to the summit. Cinder land is described as "areas of bedded magmatic ejecta" which display various shades of red, yellow, black or brown from the decomposition of iron oxide. Mixtures of volcanic cinder, ash and pumice found at the summit area are the result of eruptions of the cinder cones of Pu'u 'Ula'ula [Red Hill], Pu'u Kolehale and Paka'oa'o [White Hill]. The soil association found in the summit area is classified as "Rock land", and can be generally described as rough, mountainous land. The soil association is made up of areas where exposed rock covers 25 to 90 percent of the surface, wherein rock outcrops and shallow soils are the main characteristics. Although cinder land soils of the rock land association supports some vegetation, the primary land use is for wildlife habitat and recreational areas (Foote et al. 1972:29).

Rainfall at the summit of Haleakalā averages between 8 inches during the months of December-January, and 0-2 inches during June, for a yearly average between 30 and 55 inches (Giambelluca et al. 1986) and is vastly different than rainfall measured at the northeastern end of the crater, which can average as much as 180 inches per year (Juvik and Juvik 1998). The annual mean temperature (based on a standard 30-year period from 1961-1990) at the Haleakalā Research Station is 52.4°F, with a yearly maximum temperature of 62.6°F and a yearly minimum temperature of 44.1°F (Sanderson 1993:51).

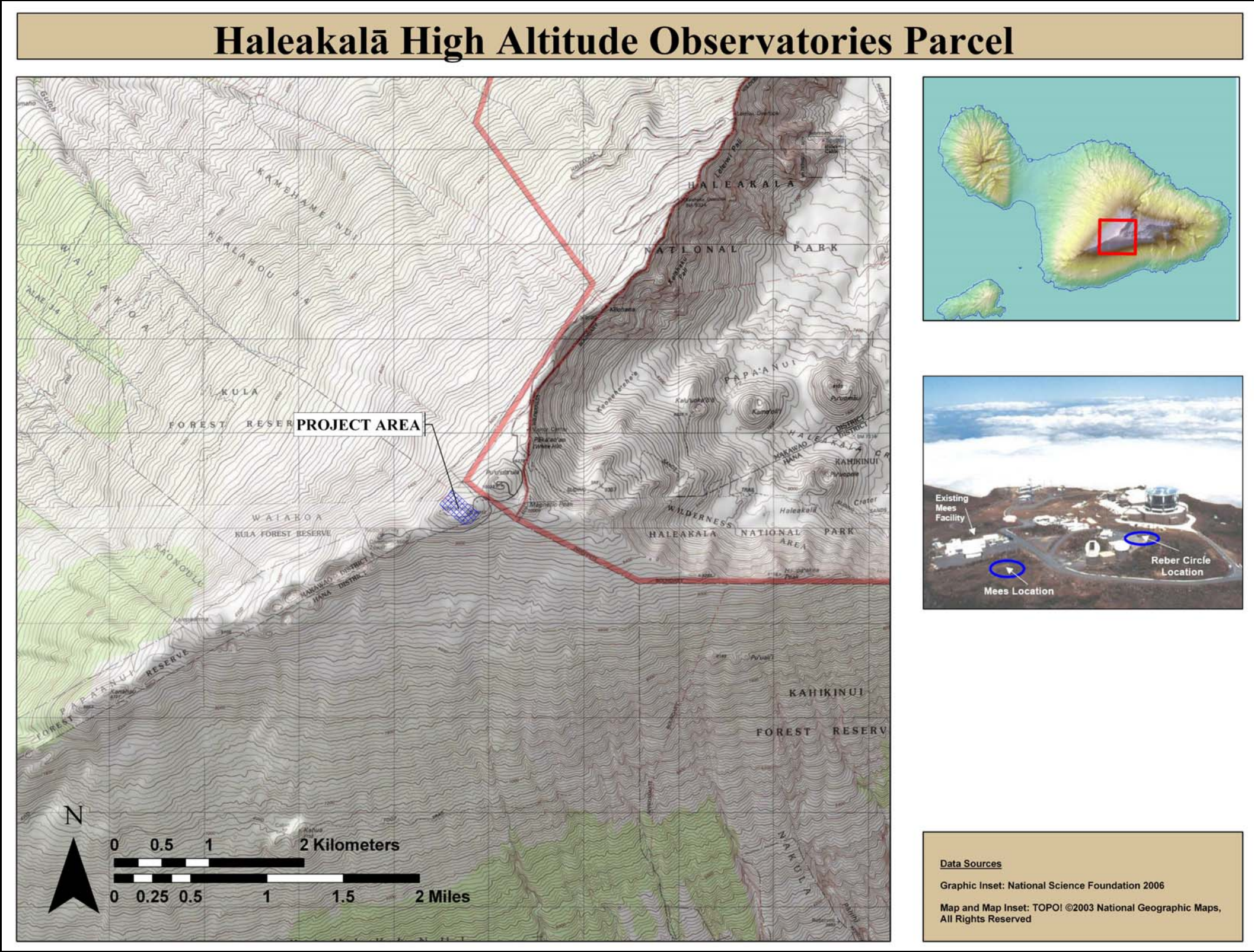


Figure 1. Portions Kilohana (1983) and Lualailua Hills (1983) 7.5-minute USGS topographic quadrangles with project location indicated by blue shaded area.

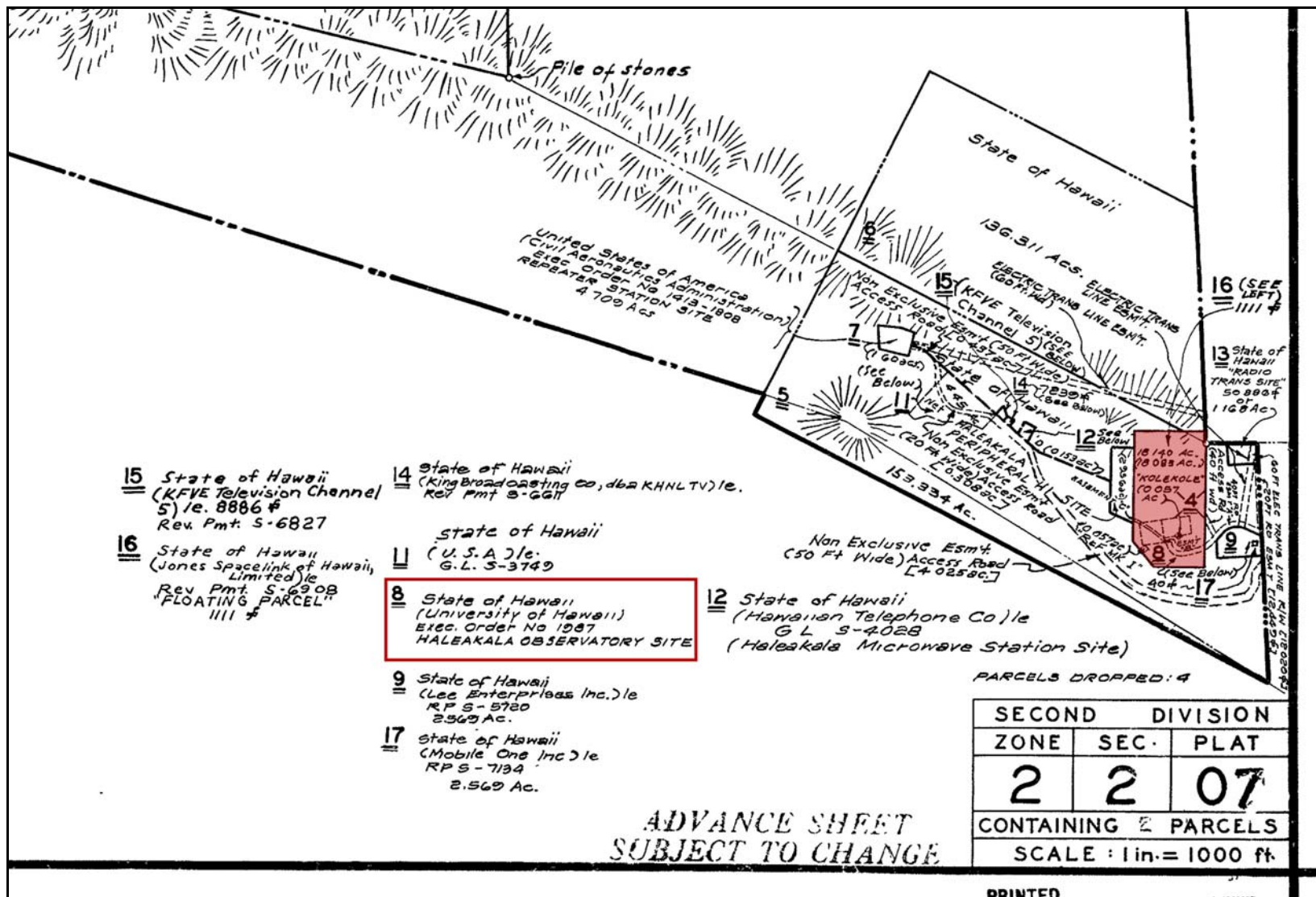


Figure 2. TMK (2) 2-2-07 showing location of project area shaded in red

Plant cover within the project area is sparse (approximately 5-10% cover), consisting primarily of kūpaoa (*Dubautia menziesii*), a native plant of the daisy [Asteraceae] family. Other plants observed included an invasive perennial grass (*Deschampsia nubigena*) common to the high altitude environment, and a native species of grass, *pili uka* (*Trisetum glomeratum*). *Pūkiawe*, a native shrub (*Styphelia tameiameia*), and a native daisy (*Tetramolopium humile*), were also observed (www.hear.org/starr/hiplants/). A complete listing of project area plants can be found in Appendix E (Botanical Survey), in the parent document prepared by KC Environmental (2006).

Several previous investigations of the avifauna observed at the Haleakalā National Park have documented the existence of endangered bird species that live at the summit area of the crater. A complete listing of the project area bird populations can be found in Appendix I (Petrel Monitoring Plan), in the parent document prepared by KC Environmental (2006).

1.3.2 Built Setting

To the north of the project area boundary, a paved road leads to the visitor observatory at the summit of Pu‘u ‘Ula‘ula . A paved and restricted-access roadway to the FAA and Hawaiian Telcom stations lies to the south of the project area. A visitor observatory is located on a secondary ridge of Pu‘u ‘Ula‘ula , overlooking the trailhead of Sliding Sands and the crater (to the east) and the as-built facilities of “Science City” (to the west).

The resident facilities of “Science City” are a mixture of defense structures maintained by subcontractors to the United States military, such as the AMOS Air Force Maui Optical Station, and scientific observatories operated by various countries, such as the MAGNUM 80-inch telescope operated by astronomers from Japan. The observatories at the summit of Haleakalā are coexistent with broadcast and relay substations for television and radio.

Section 2 Methods

2.1 Documentary Research

Historical documents, maps, online resources, and existing archaeological reports pertaining to the myths and legends of Mauna Haleakalā, prominent figures in traditional Hawaiian history, and historic properties were researched. Venues of research included the private collection of the authors, the State Historic Preservation Division, as well as maps on file at the Library of Congress.

2.2 Community Consultation

The Office of Hawaiian Affairs, the Department of Hawaiian Homelands, the Maui/Lanai Islands Burial Council, the Maui County Cultural Resources Commission and members of other community organizations were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the study area. A discussion of the consultation process specific to the current study can be found in Section 6 Community Contacts and Consultations. Please refer to Table 13. Preliminary Results of Community Consultations for a complete list of individuals and organizations contacted for this study.

Section 3 Traditional and Historic Background

In order to gain an understanding of the importance and significance of Haleakalā, it is necessary to look at the symbology of the mountain, as well as the mountain's role in the history of Maui Island as a living entity. It has been said that the island of Maui was once known as Ihikapalaumaewa (Kamakau in Sterling 1989:2 and McGuire and Hammatt 2000). The name suggests a meaning of sacred reverence and respect (from *hō'ihī*). In former times, Maui was also known as Kūlua, a probable reference to the East and West Maui districts, which were separate polities by A.D. 1400-1500 (Sterling 1998:2; Kolb *et al.* 1997:16).

Traditionally, Maui Island was separated into 12 *moku*, or districts during the time of the *Ali'i* Kakaalaneo and under the direction of the *Kahuna* Kalaiha'ohi'a (Beckwith 1940:383). The western portion Maui Island, dominated by Mauna Eke, the range commonly referred to as the West Maui Mountains, was subdivided into three *moku*: Lāhaina, Ka'anapali, and Wailuku. The eastern portion of Maui Island, dominated by Mauna Haleakalā, was subdivided into the remaining nine *moku*: Hāmākua Poko, Hāmākua Loa, Ko'olau, Hāna, Kīpahulu, Kaupō, Kahikinui, Honua'ula, and Kula. There is a naturally circular stone plateau, referred to as Pālaha (Sterling 1998:3), along the summit of Haleakalā where one *ahupua'a* from each *moku*, with the exception of Hāmākua Poko, originate. Pōhaku Pālaha (Figure 3), as it is commonly known today, is located on the northeast edge of Haleakalā Crater, at Lau'ulu Paliku and is considered as the *piko* (navel or umbilical cord [Pukui and Elbert 1986]) of east Maui (Mr. Timothy Bailey, personal communication [Subsection 6.1.11]; see also Section 7.7 Pōhaku Pālaha-The Piko of East Maui).

Kapi'ioho Naone (in McGuire and Hammatt 2000) recalls a story told by Kupuna Pale, a Hawaiian woman that he cared for as a young boy. According to Naone, she always referred to Haleakalā as the entire mountain and to Halemahina as the West Maui mountains:

(S)he would refer to Haleakalā as the house of the male and, this one over here as Halemahina, the house of the female or the house of the moon ... The whole West Maui mountains, she considered the *piko ka honua*, the navel of the earth, the woman. She would tell me that Maui was lucky because Maui had a male and female — Maui was complete. It wasn't all male and it wasn't all female. It was complete. And, so we would talk about Haleakalā as the male part of the island ... (Kapi'oho Naone in McGuire and Hammatt 2000:Appendix B)

Sam Ka'ai (in McGuire and Hammatt 2000:13) also indicated that Haleakalā was "male" and related that the best adze material comes from a cliff at Nu'u where Māui's *ule* (penis) struck the side of the mountain

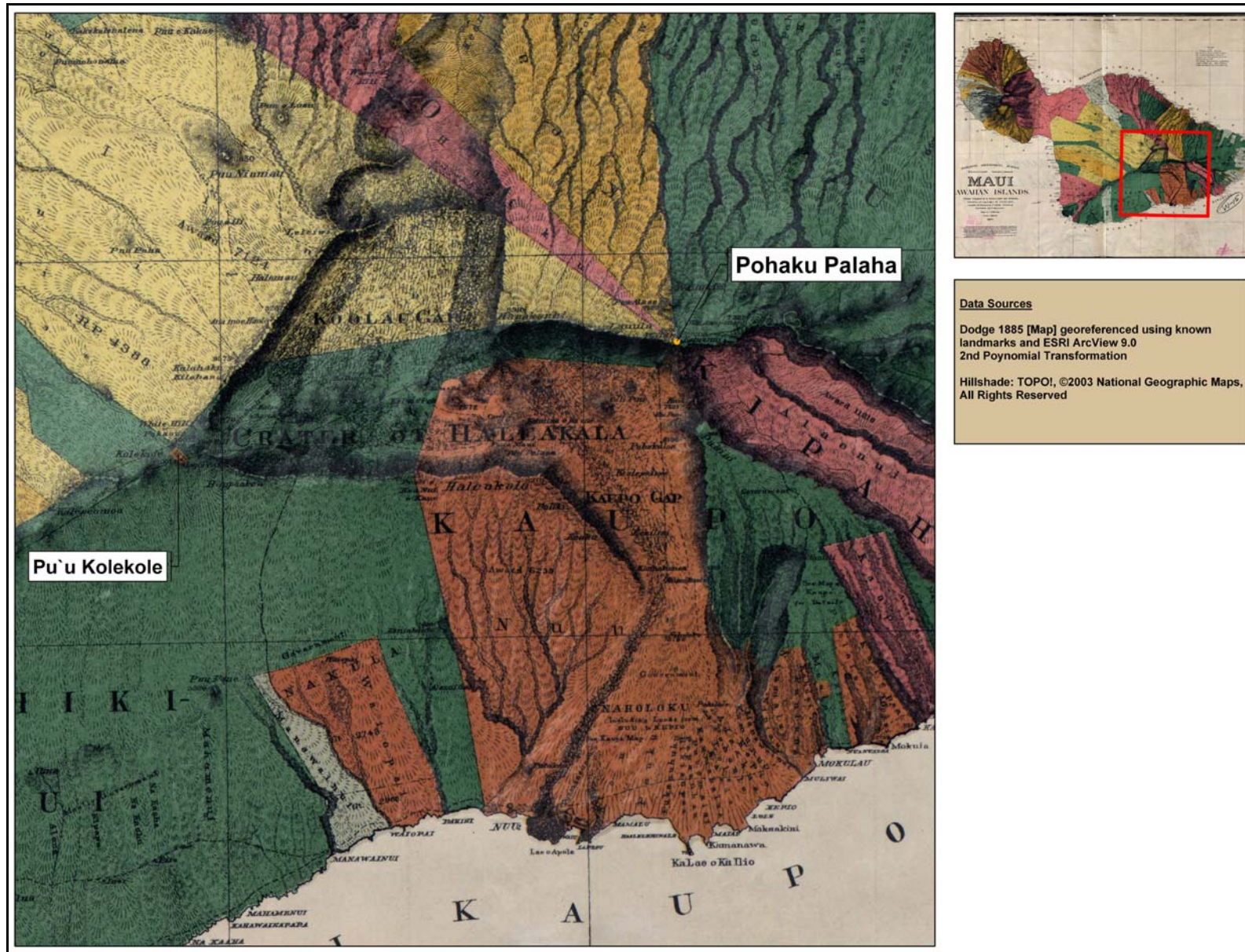


Figure 3. A portion of the Hawaiian Government Survey Map (Dodge 1885) showing Pōhaku Pālaha in relation to Pu‘u Kolekole.

3.1 Traditional Accounts of Haleakalā

According to Abraham Fornander, the name “Halekalā” is said to be a “misnomer” and is incorrect: Aheleakala is the correct name (Fornander 1919, V, III: 536). He goes on to explain that Ahelekalā is:

The ancient name of Maui’s famous crater, which means, “rays of the sun,” and it was these which the demigod Maui snared and broke off to retard the sun in its daily course so that his mother might be able to dry her kapas. (Fornander 1918-1919:V:534-36)

Fornander (1918-1919:V: 538) further states that an informant, Lemuel K.N. Papa Jr., gives the correct name is Alehelā “on account of Māui’s snaring the rays of the sun, where the word ‘*alehe*’ is a variant form of ‘*ahēle*’. Both words literally mean “to snare”. “Haleakalā” refers to not only the literal meaning, but the fact that the sun’s path passes through Haleakalā each morning, thus the common interpretation of the name, “house of the rising sun”. Today, the practice of driving up to the summit of Pu‘u ‘Ula‘ula to see the sunrise, by both tourist and *kama‘āina*, serves to reinforce this perception of the name “Haleakalā”.

Inez Ashdown (1971:68) disagrees with Fornander and writes that “Aleha-ka-lā” (Sun-snarer) is a more recent name attributed to the Māui traditions and Māui’s feat of slowing the sun. She goes on to say that the name is really “Hale‘a-ka-lā” which refers to the “entire east mountain of Maui”, while “Hale-a-ka-lā” is the peak over by Kaupō Valley. She writes:

The proper name means Consecrated to, or by the sun and is poetically associated with Nā Mele o Nā Māhele of that mountain of legends and creation. (Ashdown 1971:68.)

...or a sacred place of rejoicing because Wa-na-ao, the Dawn, brings the new day from that mountain mass. (Ashdown 1971:30)

Included in the first U.S.G.S survey of Haleakalā Caldera report was also a cultural analysis of the place name “Haleakala”:

Some of the white residents, learned in the native language, suggest that this name should be Hele-o-ka-lā, which means the trap in which the sun was caught. *Hale* means a house, but *hele* means a trap. The prepositions *a* and *o* both signify *of*, but the former implies an active relation of the *la*, or sun, while the latter implies a passive relation; that is to say, a-ka-la means that the sun did something – perhaps built the house or dwelt in it. But o-ka-la means that something was done to the sun. Now there is a well-known myth that Maui, the great hero and Ulysses of the Hawaiians, laid a snare for the sun and caught him, compelling him to make the daylight twelve hours long instead of eight (Dutton 1883:199).

The mountain of “Hale-a-ka-la” (terminology of Westervelt 1910) is the setting for the greatest deed of the legendary demi-god of Hawaiian literature, Māui. The myth depicting Māui’s power over the travels of the sun is known throughout most of Polynesia, and although many of the details of Māui snaring the rays of the sun may be different (the composition of the snare, etc.), the importance of Māui capturing the sun as it rose in the east, from the underworld, is a universal detail. The many deeds of the demi-god Māui have become united into a

continuous series, known universally to cultural anthropologists as the “Maui Cycle” (Luomala 1949).

Legends of the goddess Pele are also well known throughout Polynesia. In Rarotonga, Pere, the fire goddess, is the daughter of Mahuika, and it is from her that Māui (the demi-god of Hawai‘i) obtains fire for his family. Pere is driven away from Rarotonga by Mahuika, and she flees to Va-ihi (Hawai‘i). In French Polynesia, Pere exists as the goddess of volcanoes, and in Aotearoa (New Zealand), she is known as Pele-honua-mea. In Hawai‘i, Haleakalā was once her home, but she is now believed to reside on the island of Hawai‘i, at the active volcanic vents of Kīlauea.

The traditional lore of Polynesia was recorded by a number of early visitors to the islands of the Pacific, and those traditions that include the Hawaiian demi-god Māui, the fire goddess Pele, and references to Mauna Haleakalā are summarized in the following table (Table 1).

Table 1. Summary of Traditions Related to Haleakalā

Legend	Source	Page No.	Synopsis
How Māui snared the sun	Armitage, George T. and Henry P. Judd (Ghost Dog and other Hawaiian Legends)	61	Reference to the sun rising over the Ko‘olau Gap: (“He made a trip over the mountain ridges and across the plains until he came to Mount Haleakalā . He first saw the sun through the Koolau Gap and then, like a giant disc, it wheeled over the top of the black crater walls and thence up into the heavens.”) Māui’s grandmother was said to have lived in Haleakalā Crater, and baked bananas in an oven near a <i>wiliwili</i> tree where the sun would stop for a meal.
Māui snares the sun	Colum, Padraic	22,26	Māui observes the sun rising over Haleakalā through a break in the chasm sides. The correct name for the crater is given as “A-hele-a-ka-lā (rays of the sun)”. As the sun comes through the chasm, it eats the bananas cooked by Māui’s grandmother, who lives at Haleakalā. Māui forces an agreement with the sun, making longer days in the summer and shorter days in the winter.
How Māui snared the sun so that his mother’s <i>kapa</i> could dry.	Colum, Padraic (Legends of Hawai‘i)	47-52	A hele-a-ka-lā (rays of the sun) is given as the old name for Haleakalā. Maui’s grandmother lives on the side of Haleakalā. The legend explains the longer days of summer and the shorter days of winter.
Legend of Māui snaring the sun	Fornander, Abraham (Fornander Collection of Hawaiian Antiquities and Folk-Lore)	Vol. V: 536,538	Māui climbs Haleakalā to slow the sun and gives “Aheleakala” as the correct name of the mountain. Māui broke some of the sun’s rays with a coconut husk snare. Fornander’s informant, Lemuel K.N. Papa Jr. gives the correct name as “Alehela” for the mountain. The name given to the sun’s rays which Māui found sleeping in a cave was “Moemoe”.
Māui conquers the sun	Hapai, Charlotte (“Legends of the Wailuku”)	4-6	Māui travels to Haleakalā from Rainbow Falls, outside of Hilo, to battle the sun. This account gives the explanation for shorter winter days and longer summer days.
Māui slows the sun	Lyons, Barbara (“Māui, The	15-19	From the tip of Mauna Kahalawai (the meeting place between heaven and earth) Haleakalā could be seen. Māui’s

Legend	Source	Page No.	Synopsis
	Mischievous Hero”)		grandmother lives at the edge of the crater, near a <i>wiliwili</i> tree with red seeds.
How Māui snares the sun	Metzger, Berta (“Tales Told in Hawaii”)	81	Māui climbs Haleakalā to snare the sun.
Slowing the sun	Pukui, Mary Kawena (“Tales of the Menehune”)	19-21	Collected from Harriet Coan, island of Hawai‘i. The sun is described as rising through an opening in Haleakalā. The seasonal variation of summer/winter is explained.
How Maui slows the sun	Thrum, Thomas (“Hawaiian Folk Tales”)	31-33	Maui observes the sun rising directly over Haleakalā and battles it to allow his mother, Hina, to dry her <i>kapa</i> . The word for sun snarer is given as “Alehekalā”.
Māui destroys Kuna Loa	Armitage, George T. and Henry P. Judd (“Ghost Dog and other Hawaiian Legends”)	72-73	Māui rests near the <i>wiliwili</i> tree on Haleakalā and sees a warning cloud (“ao ‘ōpua”) over his mother’s cave.
Māui and Kuna Loa: the long eel	Colum, Padraic (“At the Gateways of the Day”)	34	From Haleakalā, Māui sees the warning cloud (“ao ‘ōpua”) over his mother’s cave in Wailuku.
Māui and the eel, Kuna Loa	Lyons, Barabara (“Māui, the Mischevious Hero”)	25-29	Māui makes the long trip to Haleakalā to visit his grandmother. From Haleakalā, he sees the danger signs of the “ao ‘ōpua”.
Kana, the youth who could stretch himself upwards	Colum, Padraic (“At the gateways of the Day”)	145	A “groove” was made in Haleakalā by Kana, as he stepped over the sea and mountain to reach his grandmother’s door on the island of Hawai‘i. The groove remains to this day.
Legend of Kana and Niheu	Fornander, Abraham	Vol. IV: 448	Kana bends himself over the top of Haleakalā, creating a groove in the mountain which “can be seen to this day”.
Story of the Great Flood	Fornander, Abraham	Vol. V: 526	A flood accompanied the arrival of Pele in Hawaiki [Hawai‘i] after she left Tahiti. Pele and her brothers and sisters went to live at Haleakalā, where she excavated the crater with her digging stick.
Pele and the Deluge (“Kai a Kahinali‘i”)	Thrum, Thomas (“Hawaiian Folk Tales”)	36-38	Pele travels to Hawai‘i in search of a new home. A flood accompanies her. The sea rises and only the tops of the highest mountains can be seen. Pele digs the crater of Haleakalā.
How Māui lifted the sky	Armitage, George and Henry P. Judd (“Ghost Dog and other Hawaiian Legends”)	49	Storms and storm clouds plague Haleakalā, forcing Māui to push them further skyward.
Māui lifts the sky	Lyons, Barbara (“Maui the Mischevious Hero”)	7-9	Maui lifts the sky above Haleakalā.
Māui lifting the sky	Westervelt, W.D.	31	“Nevertheless dark clouds many times hang low along the

Legend	Source	Page No.	Synopsis
			eastern slope of Maui's great mountain-Haleakalā -and descend in heavy rains upon the hill Kauwīki; but they dare not stay, lest Maui the strong come and hurl them so far away that they cannot come back again”.
Māui fishes for an island	Armitage, George and Henry P. Judd (“Ghost Dogs and Other Hawaiian Legends”)	51	Mentions Haleakalā in the distance as Maui sets out to dislodge the islands from the hold of a supernatural being at the bottom of the ocean.
Maui fishing for the islands	Westervelt, W.D.	12	“The bottom of the sea began to move. Great waves arose, trying to carry the canoe away. The fish pulled the canoe two days, drawing the line to its fullest extent. When the slack began to come in the line, because of the tired fish, Maui called for the brothers to pull hard against the coming fish. Soon land rose out of the water. Maui told them not to look back or the fish would be lost. One brother did look back-the line slacked, snapped, and broke, and the land lay behind them in islands”.
Māui discovers the secret of fire	Armitage, George and Henry P. Judd (“Ghost Dogs and other Hawaiian Legends”)	66, 68	Māui sees smoke rising from the slopes of Haleakalā and discovers the secret of fire from the mudhens. The mudhens [‘alae] have a red mark on their foreheads as punishment after they tried to trick Māui and not give up the secret of fire.
The secret of fire-making	Collected by Pukui, Mary Kawena (“Tales of the Menhune”)	26-32	From a translation by A.O. Forbes in Thrum’s “Hawaiian Annual”. Tells how man accidentally discovered that the fire from lava could cook food (‘ulu, mai‘a), but did not know how to create it himself. Explained how the head of the mudhen was turned red.
Keoua, a story of Kalawao	Gowan, Herbert H. (“Hawaiian Idylls of Love and Death”)	106	Keoua goes to Kalawao, Kalaupapa (Moloka‘i) in search of his wife, Luka, a resident of the leper colony. The rising sun revealed “the majestic ridges of Haleakalā”.
The Tomb of Pu‘upehe (A Lāna‘i legend)	Thrum, Thomas (“Hawaiian Folk Tales”)	181-185	The beauty of Pu‘upehe was described: “Her glossy brown spotless body shone like the clear sun rising out of Haleakalā”.
Halemano and Princess Kama	Colum, Padraic (“At the Gateways of the Day”)	102	While at the grove at Ke-a-kui, Halemano makes a maile lei (a wreath) and describes Haleakalā: “like a painted cloud in the evening”.
Legend of Halemano	Elbert, Samuel H., editor, Selections from Fornander (1959)	266-68, 274	Halemano describes the sight of Haleakalā from Lele (Lahaina) on Maui as “like a painted cloud in the evening, as the other clouds drifted above it”.
Legend of Halemano	Fornander, Abraham	Vol. V: 238, 240	Halemano describes the sight of Haleakalā from Lele (Lahaina) on Maui as “though floating above the clouds”. The vision was enough to entice Halemano to travel to Kaupō and live there awhile.
The Jealous Wife	Metzger, Berta	81	The story of Aukele mentions Pele’s travels and her work at

Legend	Source	Page No.	Synopsis
	("Tales Told in Hawaii")		Haleakalā. Her fires were too small to heat the large crater, so she moved to Kīlauea.
The Legend of Pu'ulaina	Fornander, Abraham	Vol. V: 534-36	Details the two ancient names of the mountain (Aheleakala and Alehela). "Formerly there was no hill there, but after Pele arrived, this hill was brought forth".
Hua, the unjust king, and the famine he caused	Skinner, Charles M. ("Myths and Legends of our New Possessions")	243	Luaho'omoe of Hāna sent his two sons to live in Haleakalā to escape the wrath of Hua. Hua is cursed after the unjust death of Luaho'omoe, and dies. The two sons meet a visiting chief from O'ahu at Kaupō, and leave Haleakalā to form a new government in Hāna.
Travels of Pele and Hi'iaka	Emerson, Nathaniel	XIV-XV	Pele made her home in Haleakalā but left because it was too large to keep warm. Pele fights with queen Namakaokaha'i.
Travels of Pele and Hi'iaka: "Legend of Aukelenuiaiku"	Fornander, Abraham	Vol IV: 104-106	Pele digs a pit at Haleakalā and starts her fires burning there. The battle with queen Namakaokaha'i ends in Pele's death, but Pele returns as a spirit.
The Story of Pele and Hi'iaka	Green, Laura ("Hawaiian Stories and Wise Sayings")	18-19	Reference to Pele's travels through the islands looking for a home and her short stay at Haleakalā.
Dwelling places of Pele	Lawrence, Mary Stebbins ("Stories of the Volcano Goddess")	63	Tells of Pele's travels in Hawai'i, and of her arrival at East Maui, whereupon she began building up the mighty crater of Haleakalā.
Pele goddess of the volcanoes	Nakuina ("Hawaii: Its People, Their Legends")	25	Tells of Pele's arrival at Haleakalā and her short stay there.
Pele and her fight with her sister, Namakaokaha'i	Westervelt, W.D. ("Hawaiian legends of Volcanoes")	11	Pele dug the crater at Haleakalā with her pāoa, her special divining rod by which she tested the suitability of areas for excavation. Pele dies in the fight with Namakaokaha'i and her torn body is thrown across the coastline of Kaupō at Kahikinui.
Legend of Kihapi'ilani	Fornander, Abraham	Vol. V: 180	Warfare in East Maui spreads to Haleakalā, where Pi'imaiwa'a followed Ho'olae until he caught him on the eastern side of the mountain of Haleakalā.
The Story of the 'Ōhelo	Fornander, Abraham	Vol. V: 576	Ka'ōhelo, one of Pele's sisters, dies, and a portion of her body was thrown over to Haleakalā. She is remembered in the volcanic areas of the islands of Hawai'i by the proliferation of 'ōhelo berry shrubs.
Description of the powers of the demi-god Māui, and his relationship to Haleakalā	Westervelt, W.D. ("Hawaiian Legends of Volcanos")	12	"One legend says that he crossed the channel, miles wide, with a single step. Another says that he launched his canoe and with a breath the god of the winds placed him on the opposite coast, while another story says that Māui assumed the form of a white chicken, which flew over the waters to Haleakalā."
Burials, relating to the dead in ancient	Fornander, Abraham	Vol. V: 572	"Here are the secret graves of wherein the chiefs of Nu'u are buried, all on the side of Haleakalā."

Legend	Source	Page No.	Synopsis
times.			
Battle of the Alapa Regiment of Kalaniopu'u	Fornander, Abraham	Vol IV: 286	The Alapa Regiment of Hawai'i's chief Kalaniopu'u were annihilated at the Battle of Waikapū Commons, but not before they laid waste to Honua'ula, an area of Maui described as "the rugged slope of Haleakalā".
Pele and the snow-goddess	Westervelt, W.D.	56	"Lilinoe was sometimes known as the goddess of the mountain Haleakalā. In her hands lay the power to hold in check the eruptions which might break forth through the old cinder cones in the floor of the great crater. She was the goddess of dead fires."

3.1.1 Legends of the Demi-god Māui as Related to Haleakalā

The Kumulipo is a cosmological chant, set down by David Kalakaua in 1856 and translated by his sister Queen Lydia Liliuokalani in 1897, which includes a vivid depiction of the creation of the world. Haleakalā is linked with a portion of the Kumulipo that includes the story of Māui's birth, his many deeds prior to his snaring of the sun, and the story of his death. The translation of the chant was accomplished. Bishop Museum researcher Katharine Luomala (1949) summarized the passage in this way:

On his way to the island of Maui to the house of the sun, (Hale-a-ka-la) he was insulted by a man named Moemoe. After he snared the sun, slowed it up and made it agree to go more slowly for six months and fast the other six months, he returned to Moemoe whom he turned into stone (Luomala 1949:112).

This section of the Kumulipo chant also includes a hidden reference to Haleakalā. According to Westervelt (1910), Māui was told to search for a magical canoe bailer in the ocean off of the coast of Hāna. The bailer, once brought aboard his canoe, would be transformed into a beautiful mermaid. The Kumulipo's specific mention of "Ka'uiki" is a reference to Hāna being a famous foothill of "Mauna Haleakalā": the home of Māui before he ensnared the sun. Westervelt (1910) recorded this portion of the legend of Hina, mother of the demi-god, Māui, stating that the mermaid sought by Māui dwelt by the sea coast near "Kauiki, at the foot of the great mountain Haleakalā, House of the Sun", relating the two prominences of Kauiki and Haleakalā together (Westervelt 1910: 211).

Mauna Haleakalā played the pivotal role in the legend of Māui's snaring of the sun, providing Māui with the element of surprise and the elevation by which to capture the sun. No other island across Polynesia, with the exception of Aotearoa, had mountains tall enough to elicit a vision of a man standing level with the sun, straining to hold back the progress of its travel with an enchanted rope. Within Hawai'i, only the massive crater of Haleakalā appears as the underworld abyss from which the sun starts its westward journey each day.

3.1.1.1 A Description of the Demi-god Māui by Kalakaua (1888)

Although the chant of the Kumulipo is recited as a genealogical succession from the "era of the primeval night to the present, and intersperses the list with descriptive passages about the ancestors" (Luomala 1949:109), the longest passage in the Kumulipo is reserved for Māui, a man

elevated to the rank of a god. King David Kalakaua collected the following anecdotal information about his ancestral demi-god:

As told by tradition, the principal abode of the demi-god Maui was Hawaii, although his facilities for visiting the other islands of the group will be considered ample when it is stated that he could step from one to another, even from Oahu to Kauai, a distance of seventy miles. When he bathed – and bathing as one of his great delights – his feet trod the deepest basins of the oceans and his hair was moistened with the vapor of the clouds. It is related that at one time he reached and seized the sun, and held it for some hours motionless in the heavens, to enable his industrious spouse to complete the manufacture of a piece of *kapa* upon which she was engaged (Kalakaua 1888:502).

3.1.1.2 Stories Collected by Taylor (1870)

Aotearoa (New Zealand) has an especially rich collection of material about the demi-god Māui, and it is from this source that the best interpretation of Māui’s deed, and the closest ties to Hawai‘i are found.

The preservation of the myths of Aotearoa was undertaken in the 1860’s by the English missionary Richard Taylor. Taylor had traveled to Aotearoa immediately following the bitterest fighting between the English military and Maori people, during which the “Maori Wars” [Nga Pakanga Nu Nui O Aotearoa, or “The Great Wars of Aotearoa] dispossessed the Maori people of vast tracts of their traditional cultural lands. The title of Taylor’s book “Te Ika A Maui” literally translates as “The Fish of Maui”, the original Maori name for the North Island of Aotearoa. The islands comprising Aotearoa, according to Maori traditions, were pulled up from the sea floor by a great fish hook commanded by the demi-god Māui.

In traditional stories told by the indigenous people who populate the islands of Aotearoa, myths describing the creation of the world and the origins of the Maori people share a common deity with the indigenous people of the islands of Hawai‘i. Taylor’s writings include legends that describe Māui, the great hero god of Maori legend. In these stories, Māui is represented as having the power to lengthen the day by beating the sun and rendering him lame. According to Taylor, the telling of this story was a figurative way of recording the fact that Polynesian migrations to the temperate zone of the islands of Aotearoa [New Zealand] from the tropical waters of Hawaiiki [Hawai‘i] had amplified the change in daylight hours, where the days are necessarily longer in Aotearoa.

Taylor’s writings also documented myths of Māui’s attempts to prolong man’s life and destroy the power of death. Māui was said to have had the power to enter the underworld, and that he devised a plan to do so during the daylight hours, in order to cheat the power of the god of death. But his efforts to bring life to those already in the grave ended in tragedy for Māui. Instead of emerging from the underworld unscathed, Māui was tricked, and perished.

In the traditional stories of Māui in Aotearoa, his superhuman abilities were balanced by a small defect in his upbringing. As the grand hero of Maori mythology, he was given powers not unlike Achilles, where, because a tiny detail was overlooked, Māui grew up as a mortal being. The Maori people believed that after Māui was born, his mother [Taranga] cut off her long

tresses of hair, wrapped Māui in them, and cast him into the sea. The winds and storms became his home:

Wave-uplifting gales nursed him, and at last threw him up on the shore, where he was found by his great ancestor Tama-nui-ki-te-rangi, who carried him to his house and suspended him from the roof, that the smoke and warm air might restore him; thus he grew up and his mother called him Maui-tiki-tiki-a Taranga, or “Maui formed in the top-knot of Taranga”; his father Makea-tu-tara, at his baptism, omitted some of the Karakias [spells or incantations], and this caused Maui to be subject to death (Taylor 1870:124).

Māui was raised as the youngest of six children. A precocious child, he would wait until his five brothers had finished a day’s fishing: “he would then throw his hook into the water, and at one pull catch more fish than they had all taken together.” Secretly, Māui had taken the jaw-bone of his grandfather Muri Rangawhenua, made a fish-hook of it, and kept it concealed as a powerful spirit-hook.

One of Māui’s colossal works was tying the sun and moon together, so that having run their daily courses, they should return to their starting place. After Māui had forced the sun to travel more slowly across the sky, thus increasing the length of the day, his name came to mean “Tama-nui-te-ra”, or “the great man day”.

Hawaiki [Hawai‘i] were the islands seen as the cradle of Polynesia by the indigenous people of Aotearoa. From the original stories of the Maori come the legend that at one time, the *tuawhenua*, or the main land, was united all the way to Hawaiki [Hawai‘i] before Kupe came, cutting the land in two and allowing the sea to fill in between the two lands. Kupe was chief and master of the first canoe, named *Mataorua*, which brought the first migration from Hawai‘i to the islands of Aotearoa.

In the traditions of the Maori, the names of all seventeen canoes and the names of each prominent family making the journey to Aotearoa are sacred. The canoe that carried Māui, *Auraro tuia*, was said to have been crafted by the master builder Tutaranaki. In the list of the twenty-six generations of the Maori people, Māui is of the second generation, a demi-god ranked just below that of the father of man, Tiki. In the traditions of the Maori, Tiki took red clay and kneaded it with his own blood, and so formed the eyes and the limbs, and then gave the image breath. In this way, Tiki made man in the image of himself.

Hawai‘i is the name of the largest island in the Hawaiian Island Chain. In the language of Aotearoa, Hawai‘i is called *Hawaiki tawiti nui*, or the very distant Hawaiki. The legends of the migration of the Maori speak of *Hawaiki pata*, or nearer Hawaiki, (literally “the lesser isle”). This island, being smaller than Hawaiki, was the Maori name given to Tahiti. The legends speak of migrating islanders remaining in Tahiti until their numbers were too large for the size of the island, causing a further migrations to *Hawaiki i te moutere*; or, the other islands of Polynesia (Taylor 1870).

3.1.1.3 Legends Collected by Fornander (1919)

Fornander states, “No demigod of Hawaii figures so prominently in Polynesian mythology as does Māui, nor the hero of so many exploits throughout these islands. This accounts for the various localities claiming to be his birthplace.”

Maui was the son of Hinalauae and Hina. Their residence was at Makaliua, above Kahaukuloa, and in a northerly direction from Lahainaluna (Fornander 1919, V, II: 536).

Māui was shown to have been mischievous even before his birth. The story of the unborn Māui leaving his mother's womb to see what there was of the world around him, was recorded by Fornander as a theme not often repeated in the lore of ancient Hawai'i. A group of fishermen on the coast of Kahakuloa saw a "handsome child" diving from the precipices into the waters of their fishing grounds, disturbing their ability to catch *uhu* (*Scarus perspicillatus*). Deemed a rascal, the boy was chased inland from the coast, where he hid behind a waterfall at the back of Makamaka'ole canyon. When Māui perceived that the chase had ended, he attempted to return to his mother's womb. But he was again seen, and chased to the village of Makaliua, at the home of his mother, Hina. Confronting Hina and Māui's father, Hinalauae, the fishermen spoke of the exploits of a boy who had just entered the house ahead of them. That is how it was known that Māui, the unborn child of Hina and Hinalauae, had left his mother's womb to pursue his own adventures (Fornander 1919, V, III, 536-538).

The men went to seek a pig, a white chicken, black coconut, red fish, red *kapa* and *awa* root, and offered them as a sacrifice to the child. This act indicated that they recognized the godly character of the child.

As Māui grew to manhood, he felt sorry for his mother, because her *kapa* did not have enough time in a day to properly dry. He made plans to snare the sun so it would travel slower across the sky. He climbed Haleakalā to look for a suitable spot from which to perform this feat. At the cape of Hāmākua he saw *Moemoe* sleeping in the cave at Kapepeenui, and observed the spot that the sun rose at Hāna (Fornander 1919, V, III: 538). (Fornander notes, "Moemoe is a name given to the sun's rays which he finds at the cave. *Moemoe* means to lie down to sleep.")

Moemoe called out sarcastically, "You can not catch the sun for you are a low down farmer." Maui answered, "When I conquer my enemy and satisfy my desire I shall kill you" (Fornander 1919, V, III: 538).

To complete his plans, Māui gathered coconut husk to braid his snare at Waihe'e. He then proceeded along the Ko'olau ridge to a point upon Haleakalā where he lay in wait for the sun to arrive. Māui used his coconut husk snare to break off all of the strong rays of the sun, just as it passed directly overhead. The sun then promised to travel more slowly across the sky.

3.1.2 Legends of the Goddess Pele as Related to Haleakalā

3.1.2.1 *The Arrival of Pele in Hawai'i by Kalakaua (1888)*

In "The Legends and Myths of Hawaii" by King Kalakaua (1888), the origin of the goddess Pele is described. Kalakaua took pleasure in reminding the reader that, after more than sixty years of Christian teaching, offerings were still being made to Pele.

Pele, the dreadful goddess of the volcanoes, with her malignant relatives, was added to the Hawaiian deities during the arrival of Paoa, and temples were erected to her worship all over the volcanic districts of Hawaii (Kalakaua 1888:40).

3.1.2.2 *Pele Legends Collected by Fornander (1919)*

The legendary powers of Pele were such that lava was sent down from her mountains to punish those that had not paid her proper tribute. Kapapala challenged Pele to a *holua* sled race, and received a swift retribution from her in the “Legend of Kahawali” (Kalakaua 1888: 501-507). Her scorn turned living people into two ridges of the West Maui Mountains, and her jealousy turned her rival into Molokini island in the “Story of Puulaina” (Fornander 1919, V, III: 532). Pele’s arrival at Aheleakala was further chronicled by Fornander:

After this, Pele traveled until she came to Aheleakala, the large mountain of Maui at the rising of the sun (Fornander 1919, V, III: 536).

3.1.2.3 *Pele Legends Collected by Westervelt (1916)*

Pele, goddess of volcanoes, was the second daughter born of the Hawaiian god Ku (Kuwahailo) and the goddess Haumea. Thier first-born daughter was Na-maka-o-ka-hai , the goddess of the sea. Ellis (1826) described Pele’s six Hiiaka sisters as various “cloud holders”, who traveled with her, providing rains and winds (Westervelt 1916:15).

Na-maka-o-ka-hai ’s husband, Aukelenuiaiku, took Pele and Hiiaka as his secret wives. Although Aukelenuiaiku was a great sorcerer, he could not deliver Pele and Hiiaka from the wrath of Na-maka-o-ka-hai . She drove them from their land, into the ocean, and pursued them to the Hawaiian Islands. Pele used her Pa’oa (digging tool) to try to build a home (fire pit) for herself on the island of Kaua’i, but the angry Na-maka-o-ka-hai chased her from the island (Westervelt 1916:15). Pele struck her tool down into the earth of O’ahu, but was again pursued by Na-maka-o-ka-hai .

Thus she passed along the coast of each island, the family watching and aiding until they came to the great volcano Haleakalā . There Pele dug with her Paoa, and a great quantity of lava was thrown out of her fire-pit. Na-maka-o-ka-hai saw enduring clouds day after day rising with the colors of the dark dense smoke of the underworld, and knew that her sister was still living. Pele had gained strength and confidence; therefore she entered alone into a conflict unto death.

The battle was fought by the two sisters hand to hand. The conflict lasted for a long time along the western slope of the mountain Hale-a-ka-la. Na-maka-o-ka-hai tore the body of Pele and broke her lava bones into great pieces which lie to this day along the seacoast of the district called Kahiki-nui. The masses of broken lava are called Na-iwi-o-Pele (The bones of Pele).

Pele was thought to be dead and was sorely mourned by the remaining brothers and sisters. Na-maka-o-ka-hai went off toward Nuu-mea-lani rejoicing in the destruction of her hated enemy. By and by she looked back over the wide seas. The high mountains of the island Hawaii, snow covered, lay in the distance. But over the side of the mountain known as Mauna Loa she saw the uhane, the spirit form of Pele in clouds of volcanic smoke tinged red from the flames of raging fire-pits below (Westervelt 1916:12-13).

3.1.2.4 *A Description of the Powers of Pele by William Ellis (1826).*

In 1823 the Reverend William Ellis, an English missionary, made an extended tour of the island of Hawai’i in order to ascertain the “religious state” of the inhabitants of the group. Having previously spent six years studying the Polynesians of the Society Islands [Tahiti], Ellis

was struck by the fact that the dialect spoken by Hawaiians was very similar to the language of the Society Islanders, and that he was able to converse in a simple version of the Hawaiian language in a very short amount of time (Ellis 1826:18). In this way, Ellis was able to acquire information on the culture and traditions of Hawai'i with reasonable accuracy. As he made his way to witness an eruption of the volcano at Kīlauea, Ellis traveled from Kā'u by way of Kapāpala, and accumulated native bearers and supplies required for weeks of travel (Ellis 1826:178).

His description of the volcanic activity of Kīlauea was highlighted by his gathering of many traditional stories of Pele, the Hawaiian mythological goddess thought to control the power of the volcano. Although Ellis did not investigate Haleakalā crater on Maui, his observations of the volcanic mountains of Hawai'i were discussed directly with American protestant missionaries serving at stations across the Sandwich Islands. His description of the lore of the volcano goddess Pele, including his account of Kapiolani's famous journey to challenge the supernatural powers of Pele (Ellis 1963:187), were of great interest to the American missionaries, who organized an expedition to the summit of Haleakalā six years later (see "An Expedition by Richards, Andrews and Green to the Summit of Haleakalā" in Section 3.3 below).

Ellis (1826:204) described the "superstitions" of the native Hawaiians in regard to offerings of an edible native plant, the 'ōhelo (*Vaccinium calycinum*). The origin of the use of the 'ōhelo was not transmitted to Ellis, but it was clear that Pele, goddess of the lava, required much in the way of ritual:

As we passed along, we observed the natives, who had hitherto refused to touch any of the 'ōhelo berries, now gather several bunches, and, after offering a part to Pele eat them very freely. They did not use much ceremony in their acknowledgment; but when they had plucked a branch containing several clusters of berries, they turned their faces towards the place where the greatest quantity of smoke and vapour (sic) issued, and, breaking the branch they held in their hand in two, they threw one part down the precipice, saying at the same time, "*E Pele, eia ka ohelo 'au; e taumaha aku wau ia oe, e ai hoi au tetahi*" [translated meaning] "Pele, here are your 'ōhelos: I offer some to you, some I also eat" (Ellis 1826:205-06).

As Ellis recorded the traditions surrounding the worship of Pele, he noted that the volcanic sites of Kīlauea, as well as the dormant cinder cones and mountain ranges throughout the islands of Hawai'i were considered sacred (Ellis 1826:204). He recorded stories telling of the common people being barred from entering the mountainous areas reserved for Pele (Ellis 1826:190) and her godlike brothers and sisters:

They considered it the primeval abode of their volcanic deities. The conical craters, they said, were their houses, where they frequently amused themselves by playing at *Konane* [a game similar to checkers], the roaring of the furnace and the crackling of the flames were the *kani* of their *hura*, (music of their dance), and the red flaming surge was the surf wherein they played, sportively swimming on the rolling waves (Ellis 1826:216).

Ellis was also able to determine from his informants that the fires of the underworld had been burning from the beginning of time. He observed that the stories they told referred to a timeline

that appeared to be ancient, or “*mai ka po mai*”: from chaos ‘till now. Other Polynesian societies which Ellis had spent years observing (Fitzpatrick 1986:85), referred to night as a chaotic state. The Hawaiian concept of the origin of the world, and of the time during which “almost all things therein [were made], the greater part of their gods not accepted”, occurred during this night time. Ellis noted that Hawaiians referred to the present time as *ao marama*, the words for “day”, or a state of light (Ellis 1826:216). He went on to describe the fires of the underworld, from which Pele derived her powers of creation and destruction:

[Pele] had overflowed some part of the country during the reign of every king that had governed Hawaii. Kirauea [Kīlauea] had been burning ever since the island emerged from night, it was not inhabited till after the *Tai-a-kahina’rii*, sea of *Kahina’rii*, [the story of a great flood brought by Pele] or deluge of the Sandwich Islands. Shortly after that event, they say, the present volcanic family came from Tahiti, a foreign country, to Hawaii” (Ellis 1826: 216-217).

Ellis next recorded the principal gods inhabiting the mountains with Pele:

The names of the principal individuals were: *Kamoho-arii*, the king Moho; *moho* sometimes means a vapour, hence the name might be the king of steam or vapour - *Ta-poha-i-tahi-ora*, the explosion in the place of life - *Te-ua-a-te-po*, the rain of night - *Tanehetiri*, husband of thunder, or thundering *tane* (Tane is the name of one of their gods, as well as the name of the principal god formerly worshipped by the Society islanders; [French Polynesians] in both languages the word also means a husband) - and *Te-o-ahi-tama-taua*, fire-thrusting child or war; these were all brothers, and two of them, Vulcan-like, were deformed, having hump-backs - Pele, principal goddess - *Makore-wawahi-waa*, fiery-eyed canoe breaker - *Hiata-wawahi-lani*, heaven rending cloud-holder - *Hiata-noholani*, heaven-dwelling cloud-holder - *Hiata-taarava-mata*, quick glancing eyed cloud-holder, or the cloud-holder whose eyes turn quickly and look frequently over her shoulders - *Hiata-hoi-te-pori-a-Pele*, the cloud-holder embracing or kissing the bosom of Pele - *Hiata-ta-bu-enaena*, the red-hot mountain holding or lifting clouds - *Hiata-tareia*, the wreath or garland-encircled cloud holder - and *Hiata-opio*, young cloud-holder. These were all sisters, and, with many others in their train, on landing at Hawaii [from Tahiti], are said to have taken up their abode in Kirauea. Whenever the natives speak of them, it is as dreadful beings (Ellis 1826: 218).

Although Kīlauea Crater was represented as being the principal residence of Pele and her family, they had many other dwellings in different parts of the island, as well as on the other islands of Hawai'i. Ellis noted that Pele frequently remained on the tops of the “snow-covered mountains” of Hawai'i, a reference regarding the role that Haleakalā may have played in his account of the nature of Pele:

The religious significance of Pele and her powerful family was recorded as highly important to the inhabitants of Hawai'i. The population was considered as bound to pay them tribute, or support their *heiaus*, and *kahu*, (devotees;) and whenever the chiefs or people failed to send the proper offerings, or incurred their displeasure by insulting them or their priests, or breaking the *tabu* (sacred restrictions) of their domains in the vicinity of the craters, Pele and her family would fill the crater of

Kīlauea with lava, and cause the lava either to “spout” from that point, or cause lava to be sent by way of subterranean passages to other parts of Hawai‘i. Ellis recorded native testimony that likened Pele and her spirit companions to warriors, who, when insulted, had “marched to some of their houses (craters) in the neighborhood where the offending parties dwelt, and from thence came down upon the delinquents with all their dreadful scourges” (Ellis 1826:219).

3.1.2.5 *A Description of Pele’s Journey to Hawai‘i by Forbes*

In 1915, William A. Bryan adapted a compilation of Hawaiian myths and legends by Anderson Oliver Forbes for a book about the history of the Hawaiian Islands. A. O. Forbes was born at Kaawaloa in 1833, the son of Protestant Missionaries Cochrane and Rebecca Forbes. Educated at Punahou School and ordained as a minister at Princeton Theological Seminary in New Jersey, A. O. Forbes returned to the Hawaiian Islands in 1858, and spent the next 30 years preaching at Kaluaaha, Lahainaluna, and in Hilo. He is credited with publishing the earliest accounts of the deeds of Māui and the powers of Pele.

In the beginning, there was born a most wonderful child called Pele. Hapakuela was the land of her birth, a far distant land out on the edge of the sky – away to the southwest. There she lived with her parents and her brothers and sisters as a happy child, until she had grown to womanhood when she fell in love and was married. Before long, her husband grew neglectful of her and her charms, and was enticed away from her and her island home. After a dreary period of longing and waiting for her lover, Pele determined to set out on the perilous and uncertain journey in quest of him (Bryan 1915: 89).

According to Forbes (Bryan 1915:89), the Polynesian goddess Pele then set out for the islands of Hawai‘i, which at the time, were not islands at all, but were a group of “vast unwatered mountains standing on a great plain that has since become the ocean floor”. As Pele journeyed in search of her husband, “the waters of the sea preceded her, covering over the bed of the ocean. It rose before her until only the tops of the highest mountains were visible; all else was covered by the mighty deluge. As time went on, the water receded to the present level, and thus it was that the sea was brought to Hawaii-nei” (Bryan 1915: 91).

Pele’s first home in the Hawaiian Islands was said to have been Kaua‘i, followed by Kauhako crater on Moloka‘i, then Pu‘ulaina near Lahaina. According to Bryan (1915:91), Pele then made her way to Haleakalā, “where she hollowed out the mighty crater”. The story of her travels finally ends at Kīlauea Crater on Hawai‘i.

3.1.3 Other Traditional Descriptions of Haleakalā

Writing of her childhood on the ranchlands of Haleakalā, Armine von Tempsky recorded a traditional story of the mountain in her 1940 book “Born in Paradise”:

I listened avidly while Makalii told me about the cloud warriors, *Naulu* and *Ukiukiu* – trade-wind-driven clouds split by the height and mass of Haleakalā into two long arms. *Naulu* traveled along the southern flank of the mountain, *Ukiukiu* along the northern and they battled forever to possess the summit. Usually *Ukiukiu* was victorious, but occasionally *Naulu* pushed him back. Sometimes both Cloud Warriors

called a truce and withdrew to rest, leaving a clear space between the heaped white masses of vapor looming against the blue of the sky. The space, Makalii told me, was called *Alanui O Lani* – the Highway to Heaven (von Tempski 1940:14).

The “Legend of Halemano” begins during the time that the kings of Puna and Hilo, on the island of Hawai‘i, were competing for the affections of the most beautiful woman of Kapoho, named Kamalalawalu. Halemano, a young man from Wai‘anae, on the island of O‘ahu, had a dream that he would someday meet Kamalalawalu in Ka‘au, on his island. His dream became so vivid, and his love for her grew so strong, that he denied himself all food and drink and died (Fornander 1919,V,II: 230).

But Halemano had an older sister, named Laenihi, imbued with supernatural powers, and she restored life to him. When next Halemano fell asleep, he again dreamed of a meeting with the beautiful Kamalalawalu. During this dream, Halemano asked Kamalalawalu for her name and the name of the land in which she lived. He awoke and told these things to his sister. She set out for Hawai‘i to bring Kamalalawalu to Halemano (Fornander 1919,V,II: 230).

While at Hawai‘i, Laenihi fashioned a plan that would allow her brother to win Kamalalawalu for himself. This was done, and Kamalalawalu was brought to O‘ahu to live with Halemano. But Kamalalawalu’s beauty could not be hidden, and the chief of O‘ahu, ‘Aikanaka, demanded her presence before his court. This caused Kamalalawalu, Halemano, and his family to flee O‘ahu for Lele [Lahaina] on Maui. From Lahaina, they saw the top of Haleakalā as if it were floating above the clouds. Because of this vision, they set out to make their home at Kaupō, where they tilled the soil and grew their crops (Fornander 1919, V, II: 237-240).

In a separate legend, Kana, along with his brother, Niheukalohe, waged a series of battles against Kaupepee on the island of Moloka‘i. The two brothers sought to avenge the kidnapping of their mother, Hina, and demolished the fortress of Ha‘upu on Moloka‘i in the process. Kana attains legendary status in this story, by using his special powers to change his physical form. In the struggle against Kaupepee, Kana realized that the mountain fortress of Ha‘upu was anchored to the ocean floor by two turtles. Kana stretched his body over the backs of the two turtles, trying to break the great flippers that braced them to the bottom of the sea. The turtles struggled and arched their backs against Kana’s ropelike body. Finally, faint from stretching, Kana planted his vast feet more firmly on the rocky shore of Moloka‘i, leaned across Maui, scoring a notch in Haleakalā Crater, and spun himself over the channel to Hawai‘i. There, his grandmother Uli gave him food. Refreshed, Kana gathered his strength and crumpled the turtle’s flippers, destroying the might of Ha‘upu (Fornander 1919, V, III: 519).

3.1.3.1 A Description of the ‘Ua‘u Bird in Kalakaua (1888)

A reference to the nesting habits of the ‘Ua‘u, the Dark-Rumped Petrel, (*Pterodroma phaeopygia sandwichensis*) was the focal point of a legend of Haleakalā and Hāna, recorded by King David Kalakaua. His account of the legend of Hua, King of Hāna, was included in his collection of “Legends and Myths of Hawaii”, published in 1888.

As tradition tells the story, Hua found occasion to order some *uwau*, or *uau*, to be brought to him from the mountains (Kalakaua 1888:160).

According to Kalakaua (1888), the *ali‘i-nui* of eastern Maui about A.D. 1170 was a reckless and war-like chief named Hua. Hua did not approve of a certain high-priest in his inner circle,

and schemed of a way to slay the offending member of his court. Under false pretense, Hua gave specific orders for his bird-snarers to bring him some ‘*Ua* ‘*u* birds from the uplands of Maui, and sought advice from the high-priest Luaho‘omoe as to their probable habitation.

Luaho‘omoe’s advice was for the hunting party to not venture into the mountainous region of Haleakalā, but instead to have the royal bird catchers set their snares by the seashore, where the birds were to be found during that season. Hua feigned that Luaho‘omoe had interfered with his wishes, and promised death to the high priest if his hunters were able to procure the birds in the uplands, as he had demanded.

Luaho‘omoe now understood the trap that had been set for him, and that Hua meant for him to die and for his family to be destroyed. He sent his two sons into a remote valley of Haleakalā, but was unable to inform others in his family before he was executed.

Immediately following the unjust death of the priest, an earthquake struck the *heiau* where his body was to be sacrificed, causing the remaining priests to flee in terror. Most of the people of the district fled to the uplands, chased by a hot and suffocating wind blowing from the south, drops of blood falling from the clouds, and the drying-up of all wells, springs and streams in the region.

Nothing would appease the gods that had been offended, and when Hua abandoned his desolate district on Maui and sailed to Hawai‘i, the drought followed him. After three years of wandering, he finally died of thirst and starvation.

One of Luaho‘omoe’s sons had a wife, who had been kept secretly away from the eyes of Hua. She lived in a secluded valley in the back of Hāna and, like all the other villagers, struggled to obtain water during the drought. Her name was Oluolu, and she waited patiently for her husband to return to her. Oluolu had a hidden mountain spring to sustain her and other *kuleana* members close to her (Kalakaua 1888:165).

The sons of Luaho‘omoe were seen in a vision by the high-priest of Waimalu, on Oahu, and he sailed for Maui to unite his powers with those of Luahoomoe’s sons, and bring an end to the drought, which had spread throughout the entire Hawaiian group. They met at Makena, erected an altar and prayed together to the gods. The rains came to all the islands, and Luaho‘omoe’s sons moved from Haleakalā to Hāna to serve as the new high-priests under the new regime (Kalakaua 1888: 173).

3.1.3.2 Haleakalā in Mele [music] and Oli [chants].

The following mele was composed by John Kapohakimohewa, and is entitled “Kilakila ‘O Haleakalā [Majestic Haleakalā] (http://www.kalena.com/huapala/Ki/Kilakila_Haleakalā.html).

Kilakila ‘o Haleakalā	Majestic Haleakalā
Kauhiwi nani o Maui	Beautiful mountain of Maui
Ha‘aheo wale ‘oe Hawai‘i	Prized by you, Hawai‘i
Hanohano Maui nō ka ‘oe	Glorious Maui, is the very best
Kauhala o Ka‘ao‘ao	Ka ao ao is our home
‘Ike aku iā Kilohana	That looks upon Kilohana
Kāua i ke one he‘e he‘e	You and I on the sliding sands
Me nā alanui kīke‘eke‘e	And zigzagging pathways
Kau ana lā kau ana	Settling there, settling there
Kau ana ko ia ala maka	That one’s gaze is fixed
‘O ua lio holo peki	Oh, that prancing horse
Mea ‘ole ko ia ala holo	Its gait is of no importance

A more complete list of songs and chants which depict stories of Haleakalā can be found in Appendix F of the DEIS.

3.2 Pre-Contact Setting

Religious pursuits and ceremonies were among the primary activities occurring atop Haleakalā during traditional Hawaiian times. The summit and crater of Haleakalā was considered a *wao akua* or distant mountain region, believed inhabited only by spirits (Pukui and Elbert 1986:382; see also Section 7.6 “Haleakalā as a Sacred Mountain” below).

As the elevation above 7,000 ft. would not have been well-suited for agriculture, the upper slopes of Haleakalā were likely used more for hunting and gathering by people who were recognized as specialists, as well as a travel route for messengers from the leeward to windward sides of the mountain. Specialized activities such as bird hunting for food and feathers, timber harvesting for canoes and other household uses, plant gathering for medicinal and ceremonial uses, and quarrying of fine grained basalts for adze materials and possibly weapons such as sling stones were likely carried out.

The following shrubs are examples of what probably existed during pre-contact times. These vegetative types can still be found above the 7000 ft. elevation today: *māmane* (*Sophora chrysophylla*), *pūkiawe* (*Styphelia tameiameia*), *‘a‘ali‘i* (*Dodonaea viscosa*) *‘ōhelo* (*Vaccinium reticulatum*) *‘ōhi‘ia lehua* (*Metrosideros collina*) and, of course, the renown silversword or *‘āhinahina* (*Argyroxiphium sandwicense* subsp. *Macrocephalum*). Some of the native lobelias, which attract the native birds and the sandalwood would have grown there as well.

About the uplands, Handy and Handy (1972:276) note that “there never were extensive upland plantations here [Haleakalā] comparable to those on Hawai‘i”. They go on to say:

Maui, despite the high mountains forming the west and east sections, had an even more extensive dry area than Hawai‘i. All the country below the west and south slopes of Haleakalā specifically Kula, Honua‘ula, Kahikinui, and Kaupō in old Hawaiian times depended on the sweet potato. The leeward flanks of Haleakalā were not as favorable for dry or upland taro culture as were the lower forest zones on the island of Hawai‘i. However, some upland taro was grown, up to an altitude of 3,000 feet (1972:276).

While on a survey of Maui, Handy and Handy also note that they found “groves of wild bananas ... along the north, east, and south slopes of Haleakalā the gigantic volcanic cone of East Maui; sometimes there were extensive groves, as above Hāna Bay at Maui’s easternmost point (Handy and Handy 1972:169). They also make a passing reference to the “tall luxuriant taro growing in forest humus or planted in decomposed lava on the slopes of Haleakalā ...” (Handy and Handy 1972:313). They are no doubt referring to the lower slopes of Haleakalā, below 3,000 ft.

3.3 Early Historic Era to the Late-1800’s.

3.3.1 An Expedition by Missionaries William Richards, Lorrin Andrews and Jonathan S. Green to the Summit of Haleakalā (1828)

Lorrin Andrews and Jonathan F. Green, ordained missionaries, and Dr. Gerrit P. Judd, physician, were part of the third company of missionaries sent from New England to the Sandwich Islands by the American Board of Commissioners for Foreign Missions (ABCFM). They arrived in Honolulu on March 30, 1828 and visited William Richards in Lahaina, touring Maui that summer. On August 21, 1828, Richards, Andrews, Judd and Green made the first recorded ascent of Haleakalā (U.S. Department of Interior, National Park Service 2006).

The ascent was recorded by Gerrit Judd, and originally published by the Missionary Herald, a publication of the ABCFM in Boston. More recently, the narrative was made available in its entirety in “Hawai‘i Nature Notes” (U.S. Department of Interior 2006, National Park Service).

Under the subheading “Ascent of an Extinguished Volcano”, the narrative of Judd includes the first western description of the native Haleakalā silversword (*Argyroxiphium sandwicense* ssp. *macrocephalum*) and recounts the following:

We rose early, and prepared for our ascent. Having procured a guide, we set out; taking only a scanty supply of provisions. Half way up the mountain, we found plenty of good water, and at a convenient fountain, we filled our calabash for tea. By the sides of our path, we found plenty of *ohelos*, and, occasionally, a cluster of strawberries. On the lower part of the mountain, there is considerable timber; but as we proceeded, it became scarce, and, as we approached the summit, almost the only thing, of the vegetable kind, which we saw, was a plant that grew to the height of six or eight feet, and produced a most beautiful flower. It seems to be peculiar to this mountain, as our guide and servants made ornaments of it for their hats, to

demonstrate to those below, that they had been to the top of the mountain. [U.S. Department of Interior 2006, National Park Service]

The account continued with a description of the crater and of the cinder cones within. The spectacle of Haleakalā appeared to have mesmerized the missionaries much the same way that modern tourists view a sunrise or sunset from the summit:

It was nearly 5 o'clock, when we reached the summit; but we felt ourselves richly repaid for the toil of the day, by the grandeur and beauty of the scene, which at once opened up to our view. The day was very fine. The clouds, which hung over the mountains on West Maui, and which were scattered promiscuously, between us and the sea, were far below us; so that we saw the *upper side* of them, while the reflection of the sun painting their verge with varied tints, made them appear like enchantment. We gazed on them with admiration, and longed for the pencil of Raphael, to give perpetuity to a prospect, which awakened in our bosoms unutterable emotions. On the other side, we beheld the seat of Pele's dreadful reign. We stood on the edge of a tremendous crater, down which, a single misstep would have precipitated us 1,000 or 1,500 feet. This was once filled with liquid fire, and in it, we counted sixteen extinguished craters. To complete the grandeur of the scene, Mouna Kea and Mouna Roa lifted their lofty summits, and convinced us, that, though far above the *clouds*, we were far below the feet of the traveller who ascends the mountains of Hawaii. By this time, the sun had nearly sunk in the Pacific; and we looked around for a shelter during the night. Our guide and other attendants we had left far behind; and we reluctantly began our descent, keeping along on the edge of the crater.

As the explorers searched along the southwest rim of the crater, they were able to find ancient rock shelters built, exactly as they assumed, by pre-contact Hawaiians:

After descending about a mile, we met the poor fellows, who were hobbling along on the sharp lava, as fast as their feet would suffer them. They were glad to stop for the night, though they complained of the *cold*. We kindled a fire, and preparations were made for tea and lodgings. The former we obtained with little trouble. We boiled part of a chicken, roasted a few potatoes, and, gathering round the fire, we made a comfortable meal; but the place of lodging, we obtained with some difficulty. At length, we spread our mats and blankets in a small yard, enclosed, probably, by natives, when passing from one side of the island to the other. We were within twenty feet of the precipice, and the wind whistled across the valley, forcibly reminding us of a November evening in New England. The thermometer had fallen from 77 to 43 (the next morning, the thermometer stood at 40), and we shivered with the cold. The night was long and comfortless.

The next day, the 22nd of August, 1828, the explorers returned to view the interior features of the crater and described the Ko'olau and Kaupō Gaps:

Early in the morning, we arose, and reascending the mountain, to its summit and contemplated the beauties of the rising sun, and gazed a while longer, on the scenery before us. There seemed to be but two places, where the lava had found a passage to the sea, and through these channels, it must have rushed with

tremendous velocity. Not having an instrument, we were unable to ascertain the height of the mountain. We presume it would not fall short of 10,000 feet. (This, I believe, is the height at which it has been generally estimated) The circumference of the great crater, we judged to be no less than fifteen miles. We were anxious to remain longer, that we might descend into the crater, to examine the appearance of things below, and ascend other eminences; but as we were nearly out of provisions, and our work but just commenced, we finished our chicken and tea, and began our descent.

3.3.2 The U.S. Navy Exploration of Haleakalā by Cmdr. Charles Wilkes (1841)

On February 15, 1841, a contingent from the U.S. Navy Exploring Expedition sailed from Hilo, Hawai'i to the island of Maui. Naturalist Charles Pickering, artist Joseph Drayton and botanist William D. Brackenridge had been sent to Lahaina to organize an expedition to climb "Mauna Haleakalā". In Lahaina, the expedition was joined by the Reverend Lorrin Andrews, his son, four students from the Men's Seminary at Lahainaluna, and six *kanakas* [native bearers] to carry food. (Andrews had made the ascent thirteen years earlier) Traveling by way of Waikapū, they were joined by Reverend Edward Bailey, headmaster of the Wailuku Female Seminary. They spent the first night at the home of Lane and Minor, "two Bostonians", at a sugar plantation in Makawao (Wilkes 1852:167).

The next day, as the expedition gained altitude, they noted the changing forest features:

The face of Mauna Haleakalā is somewhat like that of Mauna Kea; it is destitute of trees to the height of about two thousand feet; then succeeds a belt of forest, to the height of six thousand feet, and again, the summit, which is cleft by a deep gorge, is bare.

Our party found many interesting plants as they ascended Mauna Haleakalā, among which were two species of *Pelargonium* [geranium], one with dark crimson, the other with lilac flowers; the *Argyroxiphium* [*Argyroxiphium sandwicense*, subs. *Macrocephalum*, or Haleakalā silversword] began to disappear as they ascended, and its place was taken up by the silky species [*Artemisia mauiensis*, or 'āhinahina] which is only found at high altitudes. Near the summit they found shrubby plants, consisting of *Epacris* [*pūkiawe*], *Vaccinium* ['ōhelo], *Edwardsia* [*māmane*], *Compositae* [*Dubautia plantagenia* or *na'ena'e*], and various rubiaceous plants (Wilkes 1852:170).

Having left the tree-line behind at 6,500 feet, the barren summit was attained and the winds were noted to have been driving with great velocity. The interior of the crater, as first viewed by the expedition, was completely concealed by clouds. The elevation reading by barometer was interpreted as 10,200 feet. Barometric readings were continued as the expedition descended into the crater:

The crater of Haleakalā, if so it may be called, is a deep gorge, open at the north and east, forming a kind of elbow; the bottom of it, as ascertained by the barometer, was two thousand seven hundred and eighty-three feet below the summit peak, and two thousand and ninety-three feet below the wall. Although its sides are steep, yet a descent is practicable at almost any part of it. The inside of the crater was entirely

bare of vegetation, and from its bottom arose some large hills of scoria and sand. Some of the latter of an ochre-red colour at the summit, with small craters in the centre (Wilkes 1852: 171).

Observations regarding the cultural significance of the crater were noted:

All [of the interior features of the crater] bore the appearance of volcanic action, but the natives have no tradition of an eruption. It was said, however, that in former times the dread goddess Pele had habitation here, but was driven out by the sea, and then took up her abode in Hawaii, where she has ever since remained. Can this legend refer to a time when the volcanoes of Maui were in activity? Of the origin of the name Mauna Haleakalā, or the House of the Sun, I could not obtain any information. Some of the residents thought it might be derived from the sun rising over it to the people of West Maui, which it does at some seasons of the year (Wilkes 1852:171).

Botanist William D. Brackenridge, described a native species of flowering geranium known to Hawaiians as “*nohoanu*”:

Our gentlemen descended into the crater. The break to the north appears to have occasioned by the violence of volcanic action within. There does not appear any true lava stream on the north, but there is a cleft or valley which has a steep descent: here the soil was found to be of a spongy nature, and many interesting plants were found, among the most remarkable of which was the arborescent geranium [*Geranium cuneatum*] (Wilkes 1852:171).

Mapping the interior of the crater was undertaken by Joseph Drayton, an artist with the expedition. Although the resulting map was less than accurate (for example, the orientation of the Kaupō Gap was drawn too far to the east), it gave the world the first complete image of the immensity and layout of its features. Only three days were devoted to the study of the crater, but the drawing added greatly to the accumulating body of knowledge regarding Hawaiian volcanoes (Fitzpatrick 1986).

Mr. Drayton made an accurate drawing or plan of the crater, the distances on which are estimated, but the many cross bearings serve to make its relative proportions correct. Perhaps the best idea that can be given of the size of this cavity, is by the time requisite to make a descent into it, being one hour, although the depth is only two thousand feet. The distance from the middle to either opening was upwards of five miles; that to the eastward was filled with a line of hills of scoria, some of them five or six hundred feet high; under them was lying a lava stream, that, to appearance, was nearly horizontal, so gradual was its fall (Wilkes 1852:171).

3.3.3 Government Survey of Haleakalā by William DeWitt Alexander (1869)

W.D. Alexander's father, William Patterson Alexander, an accomplished surveyor, used his son during his school vacations as an assistant surveyor. In 1869, W. D. Alexander combined this experience with his studies at Yale, and produced a “remarkable” map of the crater features of Haleakalā during a summer vacation:

I have just been spending a summer vacation on Maui, and in the course of it made a careful survey of the great crater of Haleakalā . During the vacation I went three times to the summit. The first time I rode up from Makawao before sunrise, and spent about seven hours in collecting mineral specimens and plants, and forming a plan for the survey of the crater....On the morning of August 4th, I ascended the mountain again from Makawao, with five natives, and furnished with a superior theodolite [surveyor's transit], a dozen large bamboos for signal poles, a good tent, and provisions for a week. We spent seven days on the mountain and enjoyed almost uninterrupted fine weather (Moffat and Fitzpatrick 2004:16).

Alexander's map of Haleakalā was the first to document how dramatically magnetic north varied within a fairly short distance, which accounted for the poor quality of maps produced during the time of the Great Mahele. Observations made by W. D. Alexander were produced by rigorous surveying practices, which led to his appointment as surveyor general for the Kingdom of Hawaii in 1870 (Moffat and Fitzpatrick 2004:17).

3.3.4 An Ascent of Haleakalā by C.F. Gordon Cumming (1881)

A sightseeing trip through the ranchlands of Maui, including an ascent of the mountain of Haleakalā, was described in great detail by C.F. Gordon Cumming (1881). The journey described by Cumming required five days from leaving the island of Hawai'i to making the summit. Of scientific interest was Cumming's notion that the crater had been formed by a great explosive cataclysm, rather than by large flows of lava running at great velocity out through each of the two gaps leading to the sea, as proposed by Wilkes (1852), or by a cataclysmic collapse of the mountain-building cauldrea, as would be put forward two years later by the investigation of the U.S. Coast and Geodetic Survey (Dutton 1883). All three of these theories would prove wrong, when the work of Stearns (1942) showed that the crater had been carved by hundreds of thousands of years of erosion.

The following excerpts describe the ascent of C.F. Gordon Cumming, as well as his initial impressions of the mountain:

Next in interest to the active volcanoes of Hawaii is the vast crater known as Haleakalā , "the house of the sun." It occupies the whole summit of East Maui, which is one vast mountain-dome ten thousand feet in height, and is connected with West Maui by a low isthmus, which, as seen from the sea, presents an aspect of unmitigated and hideous barrenness, while the mountain itself, presenting a sky-line almost as unbroken as that of Mauna Loa gives small indication of the marvels which lie concealed within it (Cumming 1881:272).

I heard much that was intensely interesting concerning the early years of these islands; but one subject which, on Hawaii, is forever cropping up –namely, the wayward actions of the volcano – is here utterly lacking, for on Maui there is not the faintest suggestion of any living fire – no active crater, no solfataras, no mineral or warm springs, no steam jets. Indeed, the commonly accepted theory is that more than two thousand years have elapsed since the mighty outburst which shattered the huge mountain of Haleakalā, blowing off its entire summit as the steam might blow off the lid of a kettle. And such a lid! For the mighty cauldron in which such forces

worked is, by the lowest estimate, *twenty miles in circumference*, and upward of two thousand feet deep. It is a vast pit ten thousand feet above sea level. Looking up from the coast to the summit of that huge dome, we failed to discern the slightest dent which should betray the site of this vast crater (Cumming 1881:273).

At Haiku we found a native with horses to hire, and a store where we were able to lay in provisions, with which we filled saddle-bags lent us for the purpose. Two natives accompanied us as guides and helpers (Cumming 1881:274). The wiser travelers are those who, ascending from Makawao, make their arrangements for a night of camping out, which means sleeping in a large lava bubble that forms a cave, less than a mile from the summit. Those who prefer starting from Olinda, endeavor to be in the saddle by about 2 A.M., so as to reach the summit before sunrise, but we were far too weary to dream of such a thing. About 6 A.M., it suddenly cleared, and we hastened to prepare for the ascent. Fortunately, it is so gradual that there is not the slightest difficulty in riding the whole way. We passed a belt of pretty timber, and then rode over immense fields of wild strawberries, which unluckily were not in season. *Ohelos* and Cape gooseberries [*poha*] also abound.

Three hours steady ascent brought us to the lava bubble, where we saw evident traces of previous camping parties, and where our guide left us, while we filled our water-bottle at a spring a little further along the mountain-side. One mile more brought us to the summit. We had a momentary glimpse of a group of the cones, or rather secondary craters, rising from the bed of the great crater which lay extended at a depth of nearly half a mile below us – one, at least, of these cones attaining a height of seven hundred and fifty feet. There are sixteen of these minor craters, which elsewhere would pass as average hills, but which here are mere hillocks. Most of them are of very red lava, which has quite a fiery appearance in contrast with the blue-grey lava which forms the bed of the crater, and which is here and there tinged with vegetation. Indeed, we could discern tiny dots which we were assured were quite large trees, and at the further side there is fair camping-ground in the bed of the crater, with two springs of good fresh water [Paliku], where Professor W.D. Alexander told me he had spent considerable time, while preparing his admirable map of the crater. At certain spots is found a beautiful plant, known as the silver sword, which has the appearance of being made of finely wrought silver, and bears a blossom like a purple sunflower (Cumming 1881:274-275).

3.3.5 U.S. Geological Survey of Haleakalā by Clarence E. Dutton (1883)

The mountainous areas of each of the main Hawaiian Islands were surveyed by the U.S. Geological Survey early in 1881, with emphasis on the active volcanic region of the island of Hawai'i (Dutton 1883). Their survey of Haleakalā was accomplished by ascending the mountain, descending into the crater, and exiting by way of the Kaupō Gap.

The survey of the general characteristics of Haleakalā included comparisons with mountain-building and mountain-reducing processes observed on the island of Hawai'i. The Government Survey had assumed that the vast size of Haleakalā Crater was the result of a wholesale collapse

of the caldera -- a structure original to the building of the mountain, but inherently unstable as caldera-filling lavas cooled and settled. The survey said:

The general form and structure of Haleakalā are very similar to those of Mauna Kea and Mauna Loa. It has the same dome-like contour, and is apparently built in the same way, by the accumulation of lavas mingled with fragmental products. It has numerous cinder cones upon all parts of its surface, and though they are quite normal in form, none of them attain the large proportions of those seen upon Mauna Kea. But by far, the most striking feature of this mountain is seen upon its summit. The upper portion of the mountain contains a caldera suggestive of the same origin and mode of formation as that we have attributed to Kīlauea and Mokuaweoweo, but many times greater in extent (Dutton 1883:206).

The survey narrative continued by detailing the ascent with notes regarding vegetation. The existence and purpose of the Ko'olau and Kaupō gaps were described, and the location of Pu'u 'Ula'ula as the true summit explained:

Leaving Olinda, a faint trail winds up to the summit. As the summit is neared the vegetation steadily thins out, becoming very meager, and at last almost vanishing. We come upon the brink of the caldera very suddenly and without any premonition of its proximity. In an instant, as it were, a mighty cliff plunges down immediately before us, and the famous crater of Haleakalā is disclosed in all its majesty. Of all the scenes presented in these islands it is by far the most sublime and impressive. Its grandeur and solemnity have often been described, but the descriptions have not been overwrought (Dutton 1883:204).

In two directions, eastward and southward, this vista of volcanic plain studded with cinder cones and streaked with black lava stretches off between Cyclopean walls and vanishes by descending the mountain slopes. The eastern passage is named the Koolau Gap. The southern passage is named the Kaupo Gap. The former descends upon the windward side of the island and resolves itself into a huge ravine, and becomes confounded with a medley of vast mountain gorges scoured by erosion and encumbered with an impenetrable forest jungle. The southern or Kaupo Gap descends into a drier region between the wind and lee, and the walls gradually dwindle until at last they vanish (Dutton 1883:205).

The trail from Olinda reaches the crest of the wall a little more than two miles east of the coign [face], and in order to descend, it is necessary to skirt along the brink until the coign is reached. Everywhere a similar view is presented of the gulf below, but as we reach the angle other features are added to the scene. Right here stands a large cinder cone which forms the apex of the mountain [Pu'u 'Ula'ula]. Its height is about 300 feet. From its summit, we may gain a magnificent view not only of the abyss below, but far away in the distance to the southeastward, of the domes of Mauna Loa, Mauna Kea, and Hualalai, projecting above the domain of the clouds (Dutton 1883:206).

At this point the narrative departs from all previous investigations, owing to geologic studies undertaken by the survey:

The descent to the floor of the caldera is very easily effected here at the coign. A long slope leads downward, covered with fine lapilli and volcanic sand, into which the feet of the animals sink deeply. By zigzag courses the declivity may be made very easy and gentle. Reaching the plain below, all that is necessary to secure easy traveling is to avoid the fields of fresh lava which are generally found near the bases of the cinder cones. The eruptions of most recent date all appear to be of trivial volume, and contrast by their very insignificance with the mighty outpours of Mauna Loa. Here, too, may be seen admirable illustrations of the common fact that cinder cones are built after the lava has ceased to flow. The fresh sheets of basalt are clearly seen underlying the cones, which have evidently been built over them (Dutton 1883:208).

At the mouth of the Kaupo Gap the floor of the caldera gradually bends downward and acquires a steeper declivity towards the sea. Here we come upon larger and rougher fields of basalt which look quite recent, though obviously older than the extremely fresh basalts which are spread about the bases of the cinder cones. Most of them have the form of *aa*, but are not nearly so rough as the great fields of Mauna Loa. Here and there patches of soil have accumulated in the swales, mosses have overgrown the clinkers, grass and scrubby vegetation have taken root among them. Our camp in Haleakalā was just at the opening of the Kaupo Gap, 7,600 feet above the sea, where the more rapid descent to the ocean begins (Dutton 1883:209).

Reaching the sea-coast, we halted an hour for rest then moved onward parallel to the shore towards the east. Here is a well-built trail, without which travel would be impossible. The country in front of us is precisely similar to in its features to the Hamakua coast of Hawaii. It ends upon the sea in a vertical cliff, while the platform is sawed by cañons descending from the mountains. ... Though all are extremely beautiful, there is one in particular which seems to surpass all the others. It is named the Waialua Valley. The surrounding walls, 500 to 600 feet high, are carved into pediments of fine form and overlain with a vegetation so dense, rich, and elegant that the choicest green of our temperate zone is but the garb of poverty in comparison (Dutton 1883:210).

Long after nightfall we rode up to a fine mansion where dwelt the proprietor of the Hana plantation and received memorable hospitality. We had descended that day from the caldera of Haleakalā 7,600 feet above us, and had ridden and walked 20 miles more up and down, I know not how many cañon walls. (Dutton 1883:211).

3.4 The Project Area in the Twentieth Century

3.4.1 Geological Survey by Harold T. Stearns (1942)

Geologist Harold T. Stearns began a comprehensive survey of the island of Maui to document ground-water resources in 1932. The survey was carried on intermittently until 1942, during which time Stearns was assisted in the field for two years by H.A. Powers, and for a year

by Gordon A. Macdonald for the East Maui portion of the study (Stearns 1942:14). Stearns made the first detailed study of the geology of Haleakalā, being the first to scientifically show that the summit depression of Haleakalā was of erosional origin, a concept suggested earlier by Whitman Cross, in his paper “Lavas of Hawaii and their relations”, written for the U.S. Geological Survey in 1915.

Stearns described the processes by which the crater was formed from the original volcanic eruptions that built the enormous mountain of Haleakalā (Stearns 1942:61). He estimated that the original height of the mountain had been at least a thousand feet taller than its present height of 10,000 feet. Heavy rainfall in both the Keʻanae and Kaupō regions of the mountain began to carve away two valleys, soon joined by erosional valleys at Kīpahulu and Waihoʻi (Stearns 1942:61).

Changes in the level of the ocean caused the deep stream valleys to partially “drown”, causing widening of the valleys, and huge deposits of alluvium to be deposited along the drowned valley walls. At a time when the sea level was near its present point, Kaupō Valley experienced an cataclysmic mudflow, sweeping everything in its path to the ocean, and creating the Kaupō Gap. Although the geologic signs of such a catastrophe had not been found at Keʻanae, Stearns theorized that the same type of event probably occurred to create the Koʻolau Gap. Stearns also stated:

Haleakalā would now have at least 5 or perhaps 7 large permanent rivers had not the ancient valleys been deeply buried by thick mud flows, alluvial deposits, and hundreds of feet of highly permeable Hana lavas. Only long expensive tunnels can tap these buried rivers (Stearns 1942:90).

Following a period of accelerated erosion, owing to the valley openings toward the sea below, deep amphitheater-shaped cliff-lines at the head of both the Keʻanae and Kaupō valleys carved their way further toward the summit of Haleakalā. Renewed volcanic activity produced lines of cinder cones across the crater floor and along the outer slopes at rift zones where new lava could force its way to the surface (Stearns 1942:72). Stearns found evidence that powerful earthquakes may have been the triggering force for landslides that carved gaps, and created rift zones that criss-crossed the summit of Haleakalā (Stearns 1942:59).

During Stearns investigation of the interior of the crater, he noted various geologic structures associated with the volcanic forces that built the cinder cones. In addition, he reviewed notes by Frank Hjort, ranger-in-charge at Haleakalā National Park, who had conducted an investigation of the “Bottomless Pit”. Within the pit, which actually measured 75 feet deep, Hjort had observed the existence of sealed jars containing the umbilical cords of infants (Stearns 1942:100).

3.4.2 Military Use of the Haleakalā National Park

Prior to World War II, the United States military sought sites for “unspecified defense installations” at the summits of both Mauna Loa and Haleakalā. On April 29, 1941, the War Department was granted a special use permit by the U.S. Department of the Interior to utilize a six-acre portion of the summit at Puʻu ʻUlaʻula, adjacent to lands located just outside of the boundary of Haleakalā National Park at Kolekole (Jackson 1972:130). At the time of the Pearl Harbor attack, December 7, 1941, the Puʻu ʻUlaʻula installation was not operational. Just prior to the Battle of Midway, in June, 1942, U.S. Army radar and communications equipment at

Haleakalā was finally ready. Technical design problems caused intermittent radar failures until March, 1943, when the facility was operationally abandoned.

Although the public had been barred from access to the summit under Martial Law, following the outbreak of WWII, partial access to the National Park occurred in October 1942, with full access returned to the public in February 1943 (Jackson 1972:131).

In November, 1943, new plans for defense construction at Haleakalā were drawn up by the military, with construction commencing May 1944. The peak of Pu'u 'Ula'ula was leveled off, and a series of 90-foot tall radio masts were installed at the crater summit (Jackson 1972:131).

Throughout the “War Years” of WWII, various areas of the island of Maui were utilized either as military bases or as military training areas. The trails across the crater of Haleakalā were deemed ideal for long-distance training marches. Between 1942 and 1945, various units of the U.S. Army Infantry's 27th Division, 40th Division, 33rd Division, and 98th Division, as well as units of the U.S. Marine Corps' Fourth Marine Division, could be found making their way across the shifting cinders of the crater floor (Mary Cameron-Sanford, personal communication, 2007).

By 1945, a second defense installation adjacent to Pu'u 'Ula'ula, at Kolekole, was in operation. Although the end of the war rendered the Haleakalā facilities obsolete, the remnant radio masts remained an eyesore until they were finally removed by the military in 1950. The U.S. Air Force maintained a loose “caretaker status” over the abandoned military buildings at the summit until 1955, when the University of Hawai'i was granted permission from the federal government to pursue solar studies from the existing military buildings (Jackson 1972:132).

Between 1956 and 1958, a number of unused buildings were removed by the U.S. Air Force. At that time, the Department of the Navy was conducting a project related to the atomic bomb tests in the South Pacific (Jackson 1972:134). In 1959, the Hawai'i Air National Guard requested construction be undertaken at the summit for new communications and radar equipment, but the request was argued in Washington D.C., with astronomy researchers and the military at odds about the location of various facilities at the summit. Negotiations were not completed until 1964, when it was decided that Pu'u 'Ula'ula would be cleared of all former military debris, and that all future use of the summit would either be relegated to Kolekole (the present-day “Science City”) or just below Hosmer's Grove: both outside lands maintained by the National Park Service (Jackson 1972:134-140).

Table 2. Development Timeline atop Haleakalā

DATE	EVENT
circa 1600	Road through crater floor from Kaupō to Ke'anae built by Kihaapi'ilani.
1841	First scientific descent into crater (Wilkes Expedition, U.S. Navy).
1866	Samuel Clemens (Mark Twain) at summit of Haleakalā
1894	C. W. Dickey Summit Rest House completed.
1916	Haleakalā National Park established: 19,276 acres
1921	First archaeological study of Haleakalā by Emory
1925	First telephone service from Olinda to Summit Rest House.
1935	Construction and paving of first road to the summit completed.

DATE	EVENT
1936	Summit visitor observatory completed below White Hill.
1937	Kapalaoa, Hōlua and Palikū cabins on crater floor completed.
1940	Three U.S. Navy aircraft crash in formation at Polipoli.
1942	WWII radio and radar antennas constructed at summit.
1964	“Science City” astronomical observatories established at Kolekole
1976	U.S. Wilderness Act adds 5,500 acres to Haleakalā National Park
1992	Noise regulations move helicopter flights out of Haleakalā Crater.
Present	Haleakalā National Park: 31,083 acres total, 24,719 in wilderness. Haleakalā High Altitude Observatories: 18.166 acres total

Section 4 Archaeological Research

4.1 First Archaeological Survey of Haleakalā by Emory (1921)

Kenneth P. Emory (1921) conducted the first archaeological survey of the interior of Haleakalā, and performed excavations to explore construction methods and record cultural deposits associated with various stone structures found within the crater. Emory and his team of researchers made a survey of the apex of the mountain, including the area within the proposed ATST site. This summary of Emory's landmark work details all excavations undertaken, as well as all features noted either by Emory, or his fellow researchers. Of the sixteen larger cinder cones identified across the floor of the crater, Emory determined that twelve contained stone structures. The architecture of each group was named for the prominent cinder cone it was resident in, and a summary of archaeological activities performed at each group is listed below:

4.1.1 Haleakalā Group

The Haleakalā group of archaeological features was recorded at the highest points of Haleakalā, which Emory noted consisted of two peaks and a high connecting ridge on the south rim of the crater. The largest stacked-basalt structure in the entire crater region was documented at the top of "Summit Number 1" [Pu'u 'Ula'ula] (Emory 1921:19). Emory recorded the structure as a *heiau*, with base measurements of 57 ft (feet) by 36 ft, extending lengthwise along the ridge. The support walls were measured at heights of 18 ft (on its eastern-facing side), 12 ft (west), 6 ft (north), and 15 ft (south). The top measured 24 by 15 feet and consisted of two level spaces, the easternmost measuring 6 feet square and raised 6 inches taller than the level to the west. A wall several feet thick separated the two levels, which included an additional platform measuring 15 ft long and 6 ft wide extending out towards the crater from the easternmost wall. This portion of the platform was noted by Emory to "almost overhang the rim of the crater". Although two survey cairns (dating either to the U.S. Geological Survey of 1883, or W.D. Alexander's Government Survey of 1869) were noted to have been erected on a portion of the eastern platform, the majority of the *heiau* structure appeared well preserved (Emory 1921:20). Emory noted that ten sling-stones (water-worn pebbles) were recorded at the structure.

Just east of Pu'u 'Ula'ula , in a dip of the ridge, a large rectangular stacked-basalt stone shelter measuring 27.5 ft long, 8 ft wide to the east, 3 ft wide to the west, with walls averaging 2 ft high (measured on the inside), was recorded. Two fireplace features 9 ft apart and 2 ft square were noted. The easternmost fireplace was excavated, within which Emory noted "one inch of solid earth covering seven inches of white ash". The excavation of the second fireplace revealed "two inches of soil covering small pieces of burnt wood". In a location below the large shelter, Emory also noted four or five smaller shelters, which he described as "in ruins" (Emory 1921:19). A number of nearby shelters were described by Emory:

Half an hour's walk farther along the crest of the ridge, brought us to another rectangular shelter, 6½ feet wide and 13½ feet long, with walls 3 feet high. Among the scattered rocks of the enclosure, a fireplace, 3 feet square, was found against the south wall. Other smaller shelters lie on the nearby slope. Fifty yards east in the lowest part of the ridge between the summits of Haleakalā Mountain we

discovered a platform with a flat stone-paved top, 4½ by 8 feet, and 34 inches high, extending east and west. A few small shelters in ruins lie 50 yards beyond, one a small wall a foot high around the mouth of a cave (Emory 1921:19).

Emory recorded a stacked-basalt platform at the very top of the summit opposite Pu'u 'Ula'ula, which he termed "Summit Number 2" [Kolekole Hill]. The platform measured 20 ft long by 4 ft wide, with the tallest portion of the base facing east ("towards the crater") measuring 3 ft in height. Emory noted a survey cairn erected on the east end of the platform. Emory described six small nearby shelters as "in ruins". In the vicinity of the Pu'u 'Ula'ula platform and shelters, Emory located five sling-stones and two pieces of marine branch coral. Emory's survey of the west slope of Pu'u 'Ula'ula noted 25 stone shelters, and in the vicinity between Pu'u 'Ula'ula and Kolekole Hill, the survey noted a group of 8 or 9 stone shelters with "a great many small *ahus* (Emory 1921:19).

Other structures on the rim described by Emory included two stacked-basalt platforms located on the north rim of the crater during an exploration of the region from Hanakauhi to Palaha. The first platform was described as "merely a pavement of smooth rocks measuring 6 ft by 18 ft overlooking Kalua o Umi". The second platform, located on the summit of Hanakauhi, was described as "completely in ruins". According to Emory:

Our attention was first directed to this platform by the following remark made in the Coast and Geodetic Survey records of the station. For Hanakauhi, "Station Mark: a pillar of stone 10 feet high *on an ancient platform*, maliciously demolished in 1884 (Emory 1921:20).

The summit of White Hill is completely covered with large, strongly constructed shelters. Just west of the summit cairn a crevice in a small cliff is sealed by stones and cement. On the ground ten feet away is a table composed of four large, flat stones one on top of the other with cement in between. These are the work of W. D. Alexander during his survey of Haleakalā and together with the large stone corral near by, should not be confused with Hawaiian structures in the crater (Emory 1921:20).

4.1.2 Pu'u Naue Group

Located in a 250-foot tall cinder cone in the center of the floor of Haleakalā Crater, pre-contact historic properties resident consisted of a complex of three stacked-basalt terraced platforms. The north platform was described by Emory to have been "in ruins". The south platform, which was described as a rectangular platform measuring 26 ft (feet) long by 16 ft wide by 2 ft high, was pit-excavated to a depth of four feet. The excavation produced no "shells, artifacts, nor skeletal material". The east platform, a polygon that measured 12 ft by 12 ft by 15.5 ft by 11 ft, was trench-excavated, but no cultural deposits were found (Emory 1921:4).

4.1.3 Burial *Ahu* in Kamoa O Pele

Located on the floor of the crater of Kamoa O Pele, a cinder cone close to the cinder cone Pu'u Naue, was a pre-contact stacked-rock cairn (*ahu*) constructed to protect an individual burial (Emory 1921:5). After removing the basalt construction to ground level, a rectangular stone base measuring 6.5 feet by 5.5 feet was discovered. Further excavation revealed a human skeleton

placed face downward. The excavation located two sticks of “Mamani” wood [mamane] on either side of the remains; determined to have once been the frame of a stretcher used to convey the body to the burial site. Further examination located fragments of a decayed calabash [gourd]. A skull and jaw were found in good condition with the teeth exhibiting slight decay (two of which were observed to have been lost during life), but lower body bones were in an advanced state of decay. Skeletal remains were determined to have been of a Polynesian female, aged thirty-five years (Emory 1921:6).

Following the excavations, the burial pit was refilled, and the *ahu* rebuilt to its original height. A profile drawing revealed that the skeletal remains were arrayed with the feet facing north. The entire skeleton had been laid flat, with the leg bones folded almost to the shoulder, and hands laid across the back. To Emory, the method of burial appeared, “grasshopper fashion” (Emory 1921:6).

4.1.4 Halāli‘i Group

A cinder cone adjoining Kamoā O Pele, named Halāli‘i, included two craters separated by a wall of consolidated cinder material one hundred feet high. Using an approach from the spatter cone named Pa Pua‘a O Pele, located between Kamoā O Pele and Halāli‘i, access to a three-tiered stacked basalt terrace 36 feet long was made. The uppermost step dropped one foot to the next level, which was 26 inches wide. The next drop was 1.5 feet to a step 26 inches wide, and the final drop was two feet to a step 26 inches wide. Standing at this terrace brought into view all the other structures investigated within Halāli‘i Crater (Emory 1921:7).

Other structures investigated within Halāli‘i Crater included:

A suspected terrace covered by slide of cinders. A wall 25 feet long by two feet high could be discerned, but excavation was not possible.

A terraced platform 13 by 16 feet was excavated, but no cultural deposits were found.

A complex of three stacked-basalt terraces: the topmost terrace measuring 14 ft long by 5.5 ft wide by 1.8 ft tall; the middle terrace measuring 12 ft long by 5.5 ft wide by 3.5 ft tall; and the bottom terrace measuring 9.5 ft long by 5.5 ft wide by 2.5 ft tall. On a level near the surface of the top terrace, Emory found fragments of various human skeletal remains, including an adult tooth and a skull. Emory noted, “There was a stone to the east of the skull, and a small stone resting on top of it (Emory 1921:9).

A complex of five stacked-basalt terraces: the topmost terrace measuring 11 ft long by 7.3 ft wide by 2 ft tall; the second terrace measuring 18 ft long by 3 ft wide by 6 ft tall; the middle terrace measuring 15 ft long by 7 ft wide by 4 ft tall; the fourth terrace measuring 9.5 ft long by 5 ft wide by 1.3 ft tall; and the bottom terrace measuring 12 ft long by 5 ft wide by 2 ft tall.

Emory’s excavation notes of the topmost terrace included:

We recovered bones of an adult female and a child of four years of age within the space of the top terrace but also deep enough to have been in the fourth terrace. The skull of the woman was missing, but the jawbone in good preservation lay right side up 17 inches below the surface and 36 [inches] from the front wall of the fourth terrace. No teeth were found. Some of the molars had evidently been lost in life. Ribs

and isolated vertebrae extended the width of the grave to the cliff where we found the entire skeleton of the child buried 32 inches deep, turned slightly to its left side, the head towards the northeast. A toe bone was found five feet away, buried one foot under the east end of the platform, and some of the smaller bones were only one foot under the surface and next to the front wall (Emory 1921:10).

There was very coarse gravel about the bones and large stones on all sides of them. In examining the bones from this terrace, Mr. Sullivan found an extra femur of a child about three years of age. It is difficult to account for the absence of the long bones of the adult, which were searched for most thoroughly. Either they had been removed before the rest of the skeleton had been deposited, or the grave had been opened and the missing parts removed. I think the latter explanation the more plausible, for none of the bones were broken and some of the rib bones and vertebrae were in their appropriate position (Emory 1921:10).

While filling in the top terrace we started the sand sliding from above and brought to view several small bleached fragments of bone and a large, badly weathered jawbone with the teeth remaining in it. Bones of the same skeleton were found by digging along the edge of the dike and a pelvic bone was recovered from from a crevice in the cliff a foot and a half under the sand. By the side of it were fragments of decayed wood, probably mamani, and bits of calabash or gourd. The bones were those of a man about sixty years of age and well above the average height. Only a few teeth were left on the lower jaw; the skull and long bones were missing (Emory 1921:10).

Although Emory noted that excavation of the middle terrace “revealed nothing”, his notes regarding the fourth terrace include a description of a small sub-terrace, measuring 4 ft by 2 ft by 5 ft tall. Following the recovery of two beach pebbles that Emory interpreted as sling stones, he commenced further excavation:

Against the cliff wall, 34 inches beneath the surface of the terrace, a rib bone was found. After some difficult excavation in sliding gravels, we found a small skull, face down, slightly turned to the south, and below this a smaller skull filled with broken bones, and then a third very small skull and jaw. Scattered bones were also found. The largest skull was that of a man about sixty years of age who had lost during life most of his molar and premolar teeth. The other skulls were those of a child of four and a child of three years of age. All were of a pure Hawaiian type. (Emory 1921: 11).

4.1.5 Pa Pua'a o Pele Group

A stone structure was observed fifteen yards east of the spatter cone structure of Pa Pua'a o Pele, measuring 9 ft long by 5 ft wide. The structure, interpreted by informants as a burial containing two men and a woman who, “scratched the sacred sands and were lost in the descending fog and perished”, was excavated. A slingstone was lodged in the corner of the structure and five others were scattered about it, but no cultural deposit was revealed. Emory noted 50 *ahus* around Pa Pua'a o Pele; none half as large as the burial *ahu* in Kamoa o Pele and some consisting of only three stones one on top of the other (Emory 1921:12).

4.1.6 Hanakauhi Group

Emory relied on the testimony of Robert T. Aitken for information regarding a set of structures resident at Hanakauhi Valley. Three stacked-basalt platforms and two stacked-basalt *ahus* were observed “in a little pocket lying between Mamani and Kumu Hills”. The three platforms, which were situated respectively in the south, east, and north parts of the valley were notable for volcanic “bombs” [cobble-sized basalt ejecta with a characteristic teardrop shape: first described as a “bombe de roulement” by J. D. Dana, Manual of Geology, 4th ed., 1894:287] used in the construction. The isolated south platform was bordered by a wall less than 2 feet high, forming a rectangle 15 ft by 7 ft. The east platform was recorded as poorly preserved, and the north platform was noted with a secondary wall. The two *ahus* were recorded thus:

Near the entrance to Hanakauhi Valley are two solidly built *ahus* constructed of unmarked local stones. The north ahu measures 5 by 7 feet and the south ahu 5½ by 9 feet; both are 2½ feet high and lie east and west. By standing on them the three platforms in the valley can be seen and the approach to the valley watched (Emory 1921:13).

4.1.7 Mamani Group

A group of eleven stacked-basalt platforms, some of which were examples with features new to Emory and his team, were recorded at the foot of Mamani crater, at a cinder cone named Kalua Mamani by native informants. A small terraced platform was noted on the west slope of Mamani crater, at the base of the cinder cone. It measured 12.5 ft by 4.5 ft by 1.5 ft high, oriented northeast/southwest. This platform was noted as “very similar to the lower terraces of the north and south Hanakauhi platforms, and its dimensions were the same as the east platform” (Emory 1921:14).

An unusual square platform, located 200 ft southwest of the terraced platform described above, had been constructed on a raised knoll. It measured 4.5 ft on its north side, 6 ft on the south, 4.5 ft on the east and 6 ft on the west. It measured 1.5 ft high on the north and west, and 2.5 ft high on the east and south, with shelves 2 ft wide.

A structure comprised of slabs of *aa* clinker, stacked 1.5 ft tall in the form of a rectangle, was located 150 ft west of the square structure described above. The construction measured 3.5 ft by 7 ft. This structure, and subsequent structures described below, were located on loose cinder at the edge of an old lava flow issuing from a volcanic vent dubbed “Dante’s Inferno” by Emory. The structures were recorded in an orientation parallel to the edge of the lava flow: extending in a line northeast to southwest.

At a location 100 ft further toward the southwest, a stacked-basalt structure was recorded that differed markedly from previously recorded structures. The structure was constructed in a T-shape, the “T” measuring 3 ft square, joined eastward to a platform measuring 15 ft long by 5 ft wide by 2 ft high.

Located 130 ft further to the southwest, a platform measuring 19.5 ft long by 3.5 ft wide by 2 ft high was recorded.

Located 200 ft to the south, an area measuring 6 ft square and less than a foot high, was described as “paved with stones”. The stones were removed “to make sure that they concealed no crack or opening in the lava”. No cultural deposits were found.

The last of the related structures was located 100 ft eastward on the very edge of the *aa* flow. The structure was described as a platform measuring 3 ft by 5 ft by 3 ft high.

4.1.8 Kihapi'ilani Road

The southern portion of the *aa* clinker flow from Dante's Inferno was traversed by an ancient Hawaiian road. Emory was able to trace its course over the *aa* flow, but lost it where it crossed the loose cinders. It measured 6 to 8 ft wide and was paved with blocks of *aa* basalt. According to Emory's informants, the road was supposed to have gone around the base of Mamani Hill, through the Hanakauhi Valley, above Mauna Hina cone, and along the Kalapawili Ridge to the pond Wai Ale on the outside slope of Haleakalā, where Kihapi'ilani was said to have built a dam to hold the waters of the pool. Emory's informants stated that water-worn pebbles had been found above Mauna Hina and along Kalapawili Ridge (Emory 1921:15).

4.1.9 “Dante's Inferno” Group

Located along an *aa* clinker flow from the volcanic vent, pre-contact historic properties resident consisted of a complex of three stacked-basalt terraced platforms. The first two structures, the east and west platforms were recorded 36 feet apart. The east platform measured 14 ft long by 3.5 ft wide by 1.5 ft high. The west platform measured 10 ft long by 5 ft wide by 2 ft high. Located 75 feet northwest of the east platform, a structure recorded as the northwest platform was measured as 8 ft long by 3.5 ft wide by 1 ft high (Emory 1921:15).

4.1.10 Keahuokaholo Group

A stacked-basalt structure, described by Emory as a “curved stone wall” was recorded at Keahuokaholo, at a point where a ridge of red cinder emanating from Pu'u Maui crossed the Halemau'u trail at the midpoint of the Ko'olau Gap. Near this point and alongside of the trail was a curved stone wall that measured 34 ft long by 4.5 ft wide by 3.5 ft high. The red cinder had drifted to a height that nearly covered the middle of the construction. One hundred and fifty feet southeast of the wall was an *ahu* measured 3 by 4 feet (Emory 1921:16).

At the ridge of Keahuokaholo, between 40 and 50 stacked-basalt *ahu* were recorded within a radius of one hundred yards. East of the entrance of the trail from Halāli'i, 28 stone shelters were noted. Within the shelters, a total of 15 water-worn pebbles were collected. Five had been laid together next to a ruined shelter. Emory noted as many *ahus* and shelters north of the entrance as south of it. A stacked-basalt platform noted at the north entrance measured 9 ft by 3.5 ft by 1.5 ft high.

Another 50 small *ahus* were located at the west border of Keahuokaholo. Ruins of a platform were noted 100 ft to the south and another, measuring 3.5 ft by 12 ft, was located 300 ft to the northeast on the edge of a ravine. Located 200 ft further northeast a large flat rock, 3 ft high, was covered by a single layer of rough stones.

A few hundred yards from Keahuokaholo on the Leleiwi trail, a stacked basalt platform 3.5 ft wide and 12 ft long, built of thin slabs of *aa* clinker, was recorded. A half-mile further, the lava

tube known as the Long Cave was noted, as were 3 associated large stone sleeping shelters. Dr. George Aiken, Mr. Walter Walker and Emory followed the cave for three-quarters of a mile without reaching its end. Upon exiting the cave, Emory described a most unique site within the crater of Haleakalā:

A short distance north of the Long Cave is the pit, Na Piko Haua, 10 feet deep and 15 feet in diameter, in which we found tucked away in crevices the umbilical cords of Kaupo babies. Some of the cords were in colored cloth wrapped with the hair of the child's mother, and others were preserved in small glass bottles; the presence of the recently hidden cords testifies to the strength of superstition among present-day natives. I have heard two explanations of this custom. Mr. Poouahi, from Kaupo, whose own cord is hidden here, claims that placing the cord out of danger of destruction protects the child from becoming a thief. The other explanation is from George Aiken, who at one time saw an old native throw a collection of navel strings into the Bottomless Pit, Kawilinau, exclaiming, "To make the child strong." Probably, these spots are sacred (Emory 1921:17).

4.1.11 The 'Ō'Ō Group

A complex of three large stacked-basalt terraces located at the uppermost cinder cone on the Sliding Sands trail was recorded. The topmost terrace measured 38 ft long by 22 ft wide by 6 ft tall; the middle terrace measured 22.5 ft long by 15 ft wide by 4 ft tall; and the bottom terrace measured 20.5 ft long (at the front), 22 ft long (at the back) by 13.5 ft wide by 5 ft tall. Emory noted that all three terraces were in ruins (Emory 1921:17).

4.1.12 Keonehe'ehe'e Trail Group

Although in ruins, the original form of the east terraced platform of the Keonehe'ehe'e group, north of Pu'u o Pele, on the south side of the trail, was recognizable. Emory likened the platform features observed at Keonehe'ehe'e to those in Hanakauhi Valley. The most prominent stacked-basalt platform measured 13 ft long by 4 ft wide (east), 6 ft wide (west) by 1 ft tall (Emory 1921:17).

4.1.13 Wai Kapalaoa Shelters

Emory's description of the features of Kapalaoa include:

At the foot of Puu Maile and opposite the spring, Kapalaoa, I counted over 50 stone shelters in clusters of 3 to 10, and found pebbles lying on the sand about Kahuinaokeone, but none among the Kapalaoa shelters. I do not think the shelters can be considered fortifications; they are not in strategic positions; and are too low for a man to hide behind and defend himself while throwing sling-stones. As sleeping shelters they would serve tolerably well in clear weather, and isolated ones on the floor of the Crater have been so used even recently. The group of shelters at Kapalaoa and Keahuokaholo are large enough to serve as sleeping quarters for 150 to 200 men (Emory 1921:18).

4.1.14 Hunter's Cave Terraces

According to testimony by Robert T. Aitken, a large hunter's cave located under the east rim of the small crater known as Kalua o Aawa, half-way up the north wall of the crater of Haleakalā, was sealed over by a rockslide in 1918. The cave contained terrace construction similar to features observed on the crater floor (Emory 1921:18).

4.1.15 Lā'ie Group

Four platforms, having their long dimensions east and west, were recorded by Emory on the margin of the Kalua o 'Umi lava flow, between Lā'ie Cave and the upper trail to Lā'ie. Each stacked-basalt platform was about 50 feet apart, and measured three feet high. The first platform measured 3 ft by 6 ft; the second 4 ft by 6ft; the third 3 ft by 6 ft; and the fourth 3 ft by 5 ft (Emory 1921:18)

4.2 Other Archaeological Studies

Winslow Metcalf Walker, in his survey report entitled the *Archaeology of Maui* (Walker 1931), discusses a *heiau* on Summit 1 (named Haleakalā) on the southern ridge of Haleakalā Crater in the neighboring *moku* of Kahikinui. A trail from the Nu'u district, discussed in Emory's report, leads to the same peak on which the *heiau*, identified as Kemanono by Emory (Heiau site 229; State site 50-50-16-3626; Bishop Museum number MH-41), is located.

In 1963, Lloyd J. Soehren conducted *An Archaeological Survey of Portions of East Maui* (Soehren 1963). This report calls Emory's work "extensive", and focuses on the structural and functional interpretations of the sites within and around the perimeter of Haleakalā Crater. Based on an early radiocarbon date obtained from Holua Cave (located along the Halemau'u Trail on the north side of the interior of the crater), Soehren suggests this region was being used prior to 1000 A.D. The Haleakalā region is described as being primarily used as a traveling route from one side of the island to the other, although Soehren also mentions bird hunting, and place of refuge for war victims as possible uses. He points toward the numerous *ahu* and stone shelters as evidence for cairns, markers, shrines and wind breaks associated with traveling. Several archaeological sites were ascribed with such traditional Hawaiian practices as umbilical cord offerings, ritual and family burial rites and the collection of raw materials for adze making (Soehren 1963: 111-116).

Paul Rosendahl (1978) completed an archaeological reconnaissance for the proposed Haleakalā Highway Realignment Corridor. He reported 7 sites along the highway realignment corridor including cave shelters, a platform, cairns and walled shelters (Rosendahl 1978: 4). None of the sites found is in the present project area.

In 1991, J.C. Chatters conducted a cultural resource inventory and evaluation for 7.7 acres associated with the expansion of the Maui Space Surveillance Site located in Science City (Chatters 1991). Chatters identified four archaeological sites at the proposed location for MSSS expansion, Sites 50-50-11-2805 through 50-50-11-2808. The recorded sites consist of 23 shelters and a wall segment. A slingstone was found at site 50-50-11-2807 and a limpet shell was identified at site 50-50-11-2808 (Chatters 1991:13). Archaeological sites identified along the summit region were interpreted as pre-contact temporary shelters made by travelers passing

through the region. No further archaeological work was recommended for the expansion of the MSS Site as the proposed construction would not affect the newly recorded sites.

An archaeological inventory survey was conducted in Papa'anui by Xamanek Researches (E. Fredericksen et al. 1996) for the then proposed GTE Hawaiian Telephone Haleakalā Fiber Optics Ductline, Phase III project corridor. A total of four historic properties were identified as a result of this study, none of which were found in the surveyed portion of Papa'anui Ahupua'a.

Field inspections of localities at Haleakalā for the installation of Remote Weather Stations included one locality within Papa'anui Ahupua'a (Folk and Hammatt 1997). A low L-shaped wall was identified on the north slope of Hanakauahi and interpreted as a temporary shelter or hunting blind for goat hunters.

An archaeological inventory survey was conducted by Cultural Surveys Hawaii, Inc. (Bushnell and Hammatt 2000) in anticipation of the construction of the privately funded Faulkes Telescope. A total of two archaeological sites, State Inventory of Historic Places (SIHP) Numbers 50-50-11-4835 and -4836, were identified during the course of the inventory survey. SIHP -4835 consisted of two rock enclosures interpreted as trash burning pits associated with the military use of Kolekole. SIHP -4836 consisted of three terrace features, two enclosed and leveled areas, and one wall segment interpreted as pre-contact temporary habitation shelters.

As a part of the Long-Range Management Plan for the University of Hawaii Institute for Astronomy High Altitude Observatories, Xamanek Researches (E. Fredericksen and D. Fredericksen 2003) conducted an archaeological inventory survey of the entire 18.166-acre parcel. This inventory survey resulted in the identification of six new historic properties (SIHP Nos. -5438 through -5443), as well as additional documentation of previously recorded historic properties (SIHP Nos. -2805 through -2808 and -4836). Approximately 80% of the newly identified features were interpreted as temporary habitation sites and/or wind shelters while two features consisted of petroglyph depictions and one site consisted of a possible burial feature. Finally, a late historic era former radio telescope facility built in 1952 was also recorded during the inventory process.

Based on the overall findings of the above archaeological studies, it appears that the principal site types at Haleakalā such as trails, platforms, adze quarries, caves, temporary shelters and cairns, seem to be associated with topographic or geomorphic locations (Chatters 1991). Platforms related to traditional Hawaiian ceremony are predominantly found along the crater floor and at high promontory locations. Caves are often found on the crater rim. Temporary shelters built against rock outcrops or boulders are found scattered along the crater rim and within the crater, but are concentrated on the leeward sides of cinder cones such as Pakaoao. Cairns or *ahu* are scattered over Haleakalā.

Section 5 Scoping Meetings and Section 106 Testimony

During July 2005, and March, May and September of 2006, KC Environmental organized a total of eight community meetings to obtain public testimony on the proposed ATST. On October 12, 2006, KC Environmental also brought the Draft Environmental Impact Statement before the Maui County Cultural Resource Commission (CRC) for their review and additional public comment. Two of these meetings (March and May 2006) were meant to fulfill the Section 106 review process. Meeting notices were published in Maui Island Newspapers (e.g. Maui Weekly, the Maui News and the Haleakalā Times) and postcards were sent to a number of Hawaiian organizations and individuals in an effort to inform the public and the Hawaiian communities about the meetings (NSF DEIS 2006: sec. 5.0).

The following tables (Table 3 through Table 12) reflect public testimony given at the scoping meetings held in July 2005, Section 106 meetings held from March to May 2006, and the CRC DEIS review in October 2006. The testimonies presented here have been summarized to reflect views and cultural concerns of either individual community members or Native Hawaiian organizations for the proposed ATST*.

It is important to note that in addition to the scoping and Section 106 meetings mentioned above, additional informational meetings were conducted and mailouts were prepared and sent out by KC Environmental. For a complete list of recipients, public comments, proposals, and responses see Appendix K, NSF DEIS 2006.

* Hawaiian words in the testimonies have been italicized and edited to reflect the correct spelling.

Table 3. Cameron Center - July 12, 2005

Agency/ Individual	Summary of View and Cultural Comment	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahu Charles Kauluwehe Maxwell	Kahu Maxwell notes that there are burials, shelter sites and continuing cultural ceremonies at the 18-acre UH parcel.		None		X	None
Mr. Edward Lindsey	Mr. Lindsey asks how many stories the building will be and states that he would rather have it built somewhere else. He feels that, in supporting a project like this, there is complete disregard by the federal government of the Hawaiian people and the Maui community. He is concerned about more cultural sites being destroyed and the area being ceded lands. Asks what the carrying capacity is at the site. Mr. Lindsey explains that the Hawaiian culture is not the only culture that views Haleakalā as a sacred place. He explains that the Maori people of Aotearoa also have cultural beliefs about Haleakalā. Māui, the demi-god, also brought Aotearoa up from the sea. He describes, "It is a spiritual entity that crisscrosses and has deep spiritual meaning to cultures not only here...but throughout Polynesia."	X	None			None
Mr. Leslie Kuloloio	Mr. Kuloloio is concerned about the visibility of ATST, the proposed white color, asks if there is anything else that could be done so that it might be another color; he asks if Reber Circle would be preserved if that site is used; Mr. Kuloloio asks how deep excavations will go; Mr. Kuloloio asks how the land partnerships work on this parcel. Another concern is for the 'ua 'u, or native petrel that burrows in the area. Mr. Kuloloio states that the 'ua 'u are a symbolic Hawaiian figure: "That represents old Hawaii." After being informed that the HO lands are ceded lands, Mr. Kuloloio states that this is another cultural concern. He also inquires as to why the general public was not targeted for their comments.		None		X	None
Mr. Tim Bailey	Mr. Bailey has concerns about the petrel burrows and the native bat.		None		X	None
Ms. Puanani Lindsey	Ms. Lindsey is concerned that in the process of construction the height of the telescope might be changed due to advances in technology.		None		X	None

Table 4. Kula Community Center - July 13, 2005

Agency/ Individual	Summary of View and Cultural Comments	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahu Charles Kauluwehi Maxwell	Kahu Maxwell describes an incident when, while working as a cultural consultant for AEOS, 150 tons of rock considered to be sacred were taken from Haleakalā and crushed at Pu'unene, "...it was such a cultural insult." This crushed rock was eventually returned and used by the National Park to cover trails. Kahu Maxwell states that in ancient times Haleakalā was used by, " <i>kahuna po 'o</i> or the teaching <i>kahuna</i> . It was so sacred, that site, that nobody could even go up there. So for Native Hawaiians to look at things that are being built there, it's really an insult."		None			None
Mr. Frank Rizzo	Mr. Rizzo asks the panel if silver could be used instead of white for the exterior of ATST. Mr. Rizzo asks if solar panels will be used to offset energy dependency. Another concern was the height of ATST. And the question was asked as to why the NSF doesn't send a satellite into space to do the same type of work.		None		X	None
Mr. George Manulani Kaimiola	Mr. Kaimiola asks if anyone has asked the Mountain itself if this project is right for it. Mr. Kaimiola is concerned about the true need for ATST; and if positive economic impacts will actually make it to the community level.		None		X	None
Mr. John Wilson	Mr. Wilson is a member of the Kula Community Association. He is concerned about the mirror coating shop that is being considered for the Air Force facility and if the proposed ATST project would need a shop similar to this. He is concerned about power line requirements and the potential for a need of a transmission facility in addition to ATST. Mr. Wilson is wondering if ATST will be replacing the Mees Observatory and he also suggests presenting renderings of ATST from different locations so visual site lines can be represented.		None		X	None
Mr. Rod Rikowski	Mr. Rikowski would like to know if kids will have the opportunity to use the telescope.		None		X	None
Mr. Stan Truitt	Mr. Truitt is concerned about the power ATST would need to operate. Mr. Truitt asks about active petrel burrows.		None		X	None
Ms. Lori Bragg	Ms. Bragg comments about the visual site lines stating that she would like to see renderings from Kihei or Lahaina. Ms. Bragg asks how large the work force for ATST would be.		None		X	None
Sergeant Mitch	Sergeant Pelazar is a police officer with the Maui Police Department and is concerned about pedestrian and automobile traffic safety during construction of		None		X	None

Agency/ Individual	Summary of View and Cultural Comments	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Pelazar	ATST. He would like to know how will bike tours and tourist traffic be impacted. Sergeant Pelazar asks if Haleakalā will become a terrorist target.					

Table 5. Pukalani Community Center - July 14, 2005

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahu Charles Kauluwehi Maxwell	Relates story of 150 tons of rock excavated from Haleakalā, hauled to Pu‘unene and crushed. This rock was then returned and used to fill cracks in the pavement at the National Park in an effort to return the rock, Pele’s form, back to where it belongs.	X	None			None
Mr. Dick Mayer	Professor Mayer is concerned that the ATST renderings do not accurately portray the size of ATST because they are taken from an aerial view. He also states that the height of ATST does not coincide with the upcountry community plan and refers to page 25 of this community plan as it states, “Encourage federal, state and county cooperation in the preparation of a comprehensive Haleakalā summit master plan to promote orderly and sensitive development which is compatible with the natural and native Hawaiian cultural environment of Haleakalā National Park.” Professor Mayer states that this has not yet been done. Requests that NSF help in preparing a master plan for the summit.		None		X	None
Mr. Ed Orszula	Concerned about how many people ATST operations will bring to Maui to compete for housing and such.		None		X	None
Mr. Stan Truitt	Comments on the renderings, angles and views.		None		X	None
Mr. Walter Pacheco	Concerned that work, construction and other, performed at the higher UH site will impact their lower site. Also concerned about electrical power usage.		None		X	None
Ms. Carol Suzuki	How will the proposed ATST benefit the economy and people of Maui, jobs and education?		None		X	None
Ms. Karen Hue Sing-Ledesma	Ms. Sing-Ledesma states that she is Native Hawaiian and would rather the NSF build the ATST somewhere else and not disturb the sacredness of Haleakalā.	X	None			None
Ms. Keala Han	Responds to Mr. Orszula's concern stating that there is no way to control how many people come to Maui.		None		X	None
Ms. Martha	“I wish you would bring it somewhere else and not on Haleakalā...”	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Martin						
Ms. Prentise Wylie	Not clear on the benefits of studying the sun.		None		X	None

Table 6. Mayor Hannibal Tavares Community Center - March 28, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahu Charles Kauluwehe Maxwell	<p>Kahu Maxwell introduces himself and states that he was hired to do the Cultural Resources Evaluation (CRE). Mr. Maxwell explains that although he is doing the CRE, he is not in favor of the ATST project. Mr. Maxwell states that there are burial caves in Haleakalā Crater. He goes on to describe the gradual development of Haleakalā and his involvement as a consultant on other construction projects at Haleakalā and in this capacity informed work crews of the cultural importance of Haleakalā. Mr. Maxwell explains that his knowledge of the area was taught to him by Papa Kaalakea. He says that Haleakalā is traditionally known as Alahelekala or The Calling of the Sun. He describes an incident where 150 tons of excavated rock were taken from Haleakalā and relocated off the mountain and crushed. In an effort to have the rock replaced he had it donated to the National Park to be used to fill cracks in the road.</p> <p>Later in the meeting Kahu Maxwell responds to Ms. Mikahala Helm's comments and says about the EOS and Faulkes: "This is the same feeling I had when EOS and when Faulkes was built on there, but it is built. Whether we liked it or not, it is built. I don't want to see this happen again, and that's the reason why I put that in my report." "If you had years of fighting these people and then winding up with nothing you would feel the same what that I do."</p> <p>With regard to his proposed Center for Traditional Hawaiian Navigation and Astronomy as a mitigation measure (see Mitigation Comments, this table) Mr. Maxwell asserts:</p> <p>"(W)e should need something like this to help us to regain what we lost." Mr. Maxwell mentions that he spoke with master navigator Nainoa Thompson and ran his idea for a Traditional Hawaiian Navigation and Astronomy center by him. Mr. Thompson said that he thought it was a great idea and essentially the missing link for, "...teaching the youth of Hawaii about the brilliance and resilience of their ancestors, and the enormous feat they accomplished thousands of years ago." And Mr. Thompson committed his support and the support of the Polynesian Voyaging Society to the proposed Navigation center on Haleakalā, stating, "Uncle Charlie, can you imagine, yeah, a scientist that's working up Haleakalā can navigate the Hokulea at the same time because he's kanaka. Can you imagine that?" Mr. Maxwell states, "The potential outreach of this session could be enormous, but the more compelling reason is because it is right. A center of this magnitude possibly will produce world class Hawaii Maui-based scientists in this subject matter. Because of the training in</p>	X	X			<p>"To create Halau Ehime Na Nahoku, Center for Traditional Hawaiian Navigation and Astronomy ... a collaboration of community and cultural resources to provide a venue to Ehime Na Nahoku, or to search or gather knowledge about the bright stars above us."</p> <p>"To create and manage a scholarship fund for individuals seeking a post-high school education on the island of</p>

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	these two worlds, Polynesian discovery and modern science, these future scientist and astronomers could bridge the past to the present and beyond.”					Maui. ...
Mr. Clarence Solomon	Mr. Solomon is not clear on the purpose of ATST and how it will benefit mankind. “If you are going to desecrate that mountain, I need to know why.”		None		X	None
Mr. Edwin Lindsey	Mr. Lindsey notes that the Hawaiian community turnout is small and does not represent enough <i>kanaka maoli</i> . Mr. Lindsey takes offense at this, “This can only be shown as how hurtful that this telescope and this project is to our Hawaiian people. Today I called ten Hawaiian people that was close to me, and not one of them stated that they think it's a good idea. Not one. The all stated, ‘Are you crazy? What are they doing? Why are they destroying our mountain?’ And as far as the trade-offs, as I have said previously, I oppose this project. I respect gaining scientific knowledge, I respect what can come out of it, but not up at Haleakalā. I refuse to have Haleakalā prostituted for the sake of this project. You cannot take advantage of Haleakalā and throw ideas out to what is sacred.”	X	None			None
Mr. Keahi Bustamente	“...I'm Native Hawaiian, and I don't want it.” “I want to know between now and May 1st or 2nd...what are you guys going to do to inform the community? Because as you can see, it's not the community here.” Mr. Bustamente recommends having a meeting at a Hawaiian Homes community center. Mr. Bustamente also asks how ATST will benefit him.	X	None			None
Mr. Stanley H. Ki'ope Raymond	“I am a Native Hawaiian who does attach religious and cultural significance to Haleakalā. I will be negatively affected and offended by the proposed undertaking of the Advanced Technology Solar Telescope.” Mr. Raymond mentions a site feasibility report in which the six top sites for ATST were assessed. In this report Mr. Raymond states that the author wrote “...the entire Haleakalā mountain is rich in traditional and spiritual significance to the indigenous Hawaiian culture.” He continues, “Then I looked at all the other site feasibility reports...I didn't see any other site that said sacred. La Palma did not say sacred. Big Bear did not say sacred. Haleakalā, sacred.” Point being, that the NSF and NSO have known since 2003 that one of their top proposed ATST locations was a mountain considered sacred to Hawaiians.	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Warren Shibuya	<p>“I am a returning Maui resident...” “I support basic and applied research and the proposed housing of the Advanced Technology Solar Telescope systems...at the summit of Mount Haleakalā.” “[The] summit, of Kolekole, is <i>wao akua</i>, a level of earth's stratosphere where gods and goddesses are believed to reside and culturally guide everyday living. Ala Hea Ka La, “The path to calling the sun,” presents basic rhythms of night and day, and establishes the sun being the source for life for <i>Kanaka Maoli</i>, Hawaiians, and citizens of Maui and Hawaii.” Mr. Shibuya also comments on the EIS and point out that in it paragraph 2.6, Table 2, cost estimate breakdown states, “Educational and public outreach set at zero dollars.”</p> <p>With regard to mitigation (see Mitigation Comments), Mr. Shibuya stresses that proper cultural respect should be demonstrated by the ATST project ...behave respectfully and <i>malama mau ka la a</i>, preserve the sacredness of Haleakalā, specifically the summit area.”</p>		X	X		<p>“Astronomy, aerospace and solar study efforts at Kolekole should be respectful of <i>wao akua</i>, the sacred area above the summit and lava, the essence of Goddess Pele, despite her current home at Kilauea caldera.”</p> <p>“Special care should be exercised in digging, saving lava, and restoring earlier <i>pu’u</i> and hills and <i>wahi pana</i>, and minimizing invading air space, and restoring all sacred places.”</p>

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Keala Han	"...for years our Hawaiians had nothing, our Hawaiians didn't stand up for themselves. They let them build and build and build, and there was no education attached. But I thought it was a good proposal, and I want to thank you folks for all that respect shown to our Native Hawaiians."		X		X	Ms. Han states that she likes Mr. Maxwell's proposal
Ms. Mikahala Helm	"I was born and raised here on Maui. I am opposed to the proposed Advanced Technology Solar Telescope, ATST project. It negated the needs of the Hawaiian culture for the needs of everyone else. Once again, the needs of science are seen as more important than the needs of the Hawaiian people." "I do not believe that there is mitigation or a way to make the development of the proposed ATST less severe or intense." "I would like to ask for more time, an extreme extension of time, because there are other Hawaiians who want to testify..." "Some of us strongly feel that it is our responsibility to have a legacy for our children and the children's children, all the generations to come. And we feel it so deeply, that it is not our role to come here and give you proposals on what we can do to mitigate. But it is our role to strengthen what it is we want to do to avoid it being built here at all."	X	None			Damage cannot be mitigated

Table 7. Paūkukalo Community Center - May 1, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Audience Speaker	The speaker explains that at the first meeting at the Cameron Center, 2005, this person had asked "...the question about the heat exchange that you have for this building and I had wondered if they could not increase the size of the heat exchanges in order to cool the building more... That way could have a color other than white paint."		None		X	None
Audience Speaker	A person in the audience gets frustrated because Ms. Carney-Nunes is referring to "Native Hawaiians and Indian Tribes". This person explains, "You know, you keep on referring to Indian tribes or Native Hawaiians. You're talking about the wrong people. We're not Native - You folks have categorized us. Aboriginal, native, indigenous; these are terminologies that you people have put on us, labeled us. We're <i>Kanaka Maoli Hawai'i</i> . We're not Native Hawaiians." The speaker goes on, "You're belligerently occupying this place. Your law does not apply here. The superior law of the land is the domestic law that applies here, the <i>kumukānāwai</i> . The <i>kumukānāwai</i> , what's going on up there is not supposed to happen. So what I'm saying is that what are you doing here? What are you doing here?"	X	None		X	None
Audience Speaker	An audience member asks the question, "When is a site too sacred to be built upon? Obviously there has to be something in the language that describes when it's alright to, when it's not all right to." For example, the speaker asks, "Would you construct this on Machu Picchu, Stonehenge, Pasapa, Mt. Fuji, Mt. Everest, and Mt. Sion?"		None		X	None
Audience Speaker	An audience member asks, "...tell us again if you feel that a meeting like this is important for everybody and if this project were to go through anyway and it doesn't matter what we say, how we feel or how much it's going to hurt us -- now you as a lawyer come and tell me if this means that we can stop it because we don't want it to happen, or you tell me right now that the government doesn't give a damn and it's going to be built anyway."	X	None			None
Audience Speaker	"...according to the section 106 process, preserving and enhancing productive use of historical and cultural properties. ... how is a 14-story telescope going to enhance it at all?" "The other thing, too, is Haleakalā legally is a TCP, traditional cultural property, federally recognized as a TCP."		None		X	None
Audience	This speaker would like to know why the other sites were not looked into more		None		X	None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Speaker	closely and had questions about the details of those sites.					
Audience Speaker	The speaker asks, "How were the cultural uses and resources assessed in your determination for selection of the six sites?" The concern of the audience speaker is that the same emphasis that was placed on the scientific feasibility of the Haleakalā was not placed on the cultural resources of Haleakalā. Mr. Wagner mentions a report that was written that addresses the cultural aspects of Haleakalā, a site evaluation report, a report that Mr. Jeff Barr prepared in which he stated that the spiritual significance of the mountain would be an issue during the public review. According to this speaker, who had actually had a chance to review this particular report, the report stated, "...the entire Haleakalā mountain is rich in traditional and spiritual significance to the indigenous Hawaiian culture" and also, "The presence of observatories on the summit is considered a desecration by some." This discussion goes on to explain that those making the decision to use Haleakalā knew the cultural issues since 2003. The discussion then goes on to discuss concerns about sound levels in the areas surrounding the two <i>ahu</i> .		None		X	None
Audience Speaker	This speaker states, "You're trying to sell us a monstrosity....You're trying to turn a negative into a positive. You can feel the energy. I mean, you can really feel the energy. It's not positive."	X	None			None
Audience Speaker	The speaker calls attention to the state of the meeting, pointing out that people are getting impatient and leaving the meeting. The speaker says, "[p]eople came out here - People are leaving now. What's your purpose here? To listen or no listen or to listen to yourself talk? You should know already what the feeling is. Let's get on with the program. Listen to the people."	X	None			None
Audience Speaker	A person in the audience gives what seems to be an emotional testimony about seeing his tutu crying.		None		X	None
Audience Speaker	"Good science. Wrong place" "...We are not under US law. We are an independent nation. We have never relinquished our nationhood. There is someone sitting in our seat of government. His name is Sam. We would like to ask him to leave so that we can fill our own seat with our own people."	X	None			None
Audience Speaker	"...we are real people with a real memory. It will not be erased. We will not stand here and act as if that mountain is not important to our people, because it is. And no matter what kind of projects they propose, it's important to us. We are people."		None		X	None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Audience Speaker	Speaker is concerned about all the utilities slated to be placed underground. "We're all opposing it."	X	None			None
Audience Speaker	A speaker who says he has already given his testimony at other meetings is concerned about finding out about future public meetings and also wondering how much time and money has been invested in the section 106 process. He wants more to be spent to let the Hawaiian community know about ATST and the meetings.		None		X	None
Kahu Charles Kauluwehi Maxwell	Mr. Maxwell explains the reason for the tension of some of the community members in the audience is due to the "...hundreds of years of oppression of our people. When Captain Cook came in 1778, the missionaries came in 1820, the land put into sugar and pineapple; Hawaiians culture were turned around." "...It's the land that was taken away in 1893 and was controlled by Leleo Kalani. They made it into trust lands, then they had also government lands, but nobody has clear title of this land. You guys got to realize this." Mr. Maxwell explains why some Hawaiians don't recognize this type of ownership of land and still believe it should be in Hawaiian control. Mr. Maxwell continues later in the meeting to explain that although none of the other projects atop Haleakalā went through the section 106 process, this one is going through that process and trying to involve the Hawaiian community. He states that although he is not in favor of ATST, he would rather be someone who has a say in the process and has a say in how the Hawaiian community might benefit from it. Mr. Maxwell explains that he has submitted his own proposal for an educational component that NSF can consider funding.		X		X	For Hawaiians to be involved in all phased of the project and submit proposals for mitigation.
Maile	Maile states that she is a student at Maui Community College, "...I just want to say some things. Jerry, your mother might have given you a telescope. Our <i>kupuna</i> gave us that <i>mauka</i> ."		None		X	None
Melia	"... [O]ur <i>ohana</i> used to go up to Haleakalā every single year, maybe sometimes every month. But, you know, I was so disturbed when park ranger said that our <i>ohana</i> cannot go on -- beyond the restricted lines or whatever, you know. I am disturbed by that ever since that year when -- that was when I was 14. Right now I'm 18. ...And you know, we used to go up there to that mountain, Haleakalā, and we used to greet our ancestors, our <i>kupuna</i> and also the sun, you know." "...It's not our fault that you guys decide we can't go up there, you know. So, please, don't build that up there. We don't need any more restrictions. We like to go up to that mountain and say <i>a ala ai [e ala e]</i> to our <i>kupuna</i> , you know."	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Ed Lindsay	"...I would like to speak against this project. ... in rape there's no concurrence."	X	None			None
Mr. Lui Hokoana	Representing the Maui District Council of the Association of Hawaiian Civic Clubs: "I am here this evening to strongly urge that this telescope not be built at Haleakalā. We believe that the telescope will interfere with the natural beauty of the mountain, has the potential to impact on our economy negatively and intrudes on the <i>mana'o</i> of spirituality of the Native Hawaiian." Mr. Hokoana is concerned about how tourists might react to ATST. "I was taught to revere the mountain because it is a place where gods dwell." "This telescope is an affront to all Native Hawaiians because it tries to prioritize science ahead of our spirituality and <i>mana'o</i> . All Native Hawaiians are concerned about making sure that future generations can experience the <i>mana'o</i> of this mountain without intrusion from man." "The Central Maui Hawaiian Civic Club, the Lahaina Hawaiian Civic Club, the Ho'olehua Hawaiian Civic Club in conjunction with the Association of Hawaiian Civic Clubs strongly urges that this telescope not be built at Haleakalā. The telescope will interfere with the beauty of our Haleakalā, may impact our economy negatively, and is an intrusion to the Native Hawaiian spirituality."	X	None			None
Mr. Nikhi Landa	"...I object to what this process is doing and will do. ... I personally feel that you're insulting as you continue with the presentation because I think the key feeling here is we don't want it. So would it not be just easier for you to wrap up with the consensus that we don't want it here?"	X	None			None
Mr. Oliver Dukelow	"I was born here on Maui. I've lived here all my life. I assume in listening to what you're saying...that you have ownership to the land....Before we can discuss anything, I would like to see your title to that land."		None		X	None
Ms. Pu'unene Lindsay	"I'm sorry some of our people left without being able to testify here." "...I don't want to say...yes, I want something out of it. No, I don't want anything out of it. I don't even want it there. That's the bottom line. We don't need it here on Maui. Go to site No. 2."	X	None			None
Ms. Suzanne Burns	Ms. Burns states that she is a Native Hawaiian and had a question about the advisory council participation. She asks if they are they going to participate.		None		X	None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Toni Dizon	"I'm actually from Lahaina. I'm born and raised on Maui. I'm against this project totally. You guys don't belong there at all." "You got \$170 million to offer these gentlemen to do scientific things, then do it off the water that they polluted, do it off the land that they polluted. We need that agriculture major at Maui Community College." "...Give us the money so I can get my bachelor's degree, my master's, and the future of the land and the water. These guys ...they damn well don't belong on Haleakalā. That's sacrilegious to Pele itself as much as Maui." "But as a -- as an agriculture major, I'm pretty sure none of this should not be financed at all. Give it back to the people. You say it's for the community. Give us the money to buy our taro, give us back our taro. Give us the money to buy -- for us to finish our science degrees in agriculture and also for marine biology so we can clean our water besides our land." "...Don't give them the money. ...And they rightly should not be up there. That's cultural. Besides me being Hawaiian -- I'm proud to be Hawaiian. And s far as my <i>kupuna</i> and then my future, they're going to take that away from me and they don't deserve it at all."	X	None			None
Princess Lehuanani	Princess Lehuanani introduces herself as being from the village of Mokula [Moku'ula?] and she recalls the bombing of Kaho'olawe and how she experienced this as an eight year old child. "Haleakalā is right in the middle of our island. Please, that is the heart of our people and of our land." Wants respect and honor to ancestors and <i>kupuna</i> .		None		X	None

Table 8. Cameron Center - September 27, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
A Voice	A person in the audience is concerned about mercury being used as a cleaning agent for parts of the telescope. The audience member states that they are concerned and have trouble trusting that it will not be used because it was used on Mauna kea after those scientists had said it was not being used. "You understand our concern because we were told over and over again that there was no mercury being used, and then we found out in the documents it was not only used but it had leached into the ground."		None		X	None
A Voice	Someone voices their concern about the dangers of observing the sun and asks how the intense amount of solar power is handled when viewing the sun through a telescope. "Will this facility or any other facility that you may build in the future be used to capture of harness the sun's power?" "...I'm not confident. Even more so, I'm even more scared and more opposed now than I was two hours ago when I walked in. And I don't want nobody hurt. So the safety factor is extremely important."		None		X	None
A Voice	An audience member states, "I just want to make sure that the objections to the timing of this get entered into the public record." This person is also very concerned about how the comments will be addressed in the EIS. This person wants these comments to appear in the EIS.		None		X	None
Kaho'okipa'olu'olu Kamakawi waole	Concerned about power usage ATST will demand. "The other thing is, I just came from the Northwestern Hawaiian Islands meeting and what kills me is to compare it to the Haleakalā meeting that I was there last night. The bottom line is all of these people are trying to do something to save things, something now. It's a reactive situation now, because all of them know from the start the destruction that has happened. And I'm not saying that it's because of all outsiders. ...Maybe as Hawaiians we need to be...better educated to take care of our own <i>aina</i>All of a sudden everybody is like, whoa, we gotta save Hawaii. ... My <i>mana'o</i> is, who we going to build this thing and then years from now we're going to say, you know, we gotta save Haleakalā. ... I'm very opposed to this building for that reason."	X	None			None
Kapali Keahi	Kapali Keahi is from Lāhainā: "...I never read the EIS, but I no really read EIS. To tell you the truth, like, what I know is, like, we always confronted with development that is really not in our best interest and not in our favor. So we always shoot 'em down from the get go. And mainly we like see things happen the way we want it to happen. And right now, it's not a good time for you guys. It's never going to be. As long as that flag is waving, it's never going to be one good time for you guys. And	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	we can say this now in this day and time because, well, your predecessors, your ancestors wen' shut our people up. And the only reason why America is here is because of the military." "...We no need you guys. One house costs \$800,000.00 over here. You think we worried about what the sun is doing? ...I really don't see what impact, positive or negative, this development will eventually do to our social well-being. But, right now, I mean, already get stuff up there and that never do nothing for us anyway. And, in fact, instead of adding stuff on, we should be taking stuff off. And, well, frankly, just you guys should just go back to where you come from and stay there."					
Mr. Albert Napahi Dizon	"I'm a sixth generation. Any time somebody poke a hole in the aina, I cry. Every time when they try to build, whether it's for water and now another telescope, it hurts me inside because I am of this land. I am <i>kanaka maoli</i> . I'm born of this land. And to build something up there where only the Gods live, we Hawaiians know when the Gods out there, yeah, we know it's only for the Gods, not to put another telescope." "'A'ole, which means no. I'm against, I'm opposed of this because there's always recognition for astronomers who went to school. There's no respect for the kupuna who has the gifts." "...You damaging Hawaii nei by building more of these things. And it's not for us... <i>Ke akua</i> , there's a triangle that we go by. <i>Ke akua</i> , ohana, aina."	X	None			None
Mr. Bill Kauakea Medeiros	Mr. Medeiros stated that he is from Ke'anae, Hana. He expressed his frustration about the section 106 meetings being scheduled on the same weekend as the county fair, "the largest annual event on Maui." "We were taught by our <i>kupuna</i> to respect our ' <i>āina</i> , our sacred places where there was <i>kapu</i> , and to respect the <i>kuleana</i> that we carry. We were also taught to protect and be good stewards of the ' <i>āina</i> , of the land. I ask you, as you consider this project, that you need to respect the Hawaiian people and the culture of these islands. We as Hawaiians plan for seven generations so that we can leave a legacy for our children and grandchildren seven generations down the road. We were taught by our kupuna to also keep our ' <i>āina</i> , our land, as natural and undisturbed as possible. Hawaiians were great astronomers, environmentalist and conservationists." "...I would say that for the proponents of this project that say that there's nothing connected to a defense system, I would say that even if it was, you would not know that or you would not be an authority to disclose that information." "So what I say is respect the voices of the Hawaiian people, our ancestors and our ' <i>aumakua</i> [sic], and I join with the rest of them as I say that I oppose this project."	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Dan Sytze	Mr. Sytze is concerned that the EIS does not accurately address the issue of environmental justice. "And when it comes to the environment in Hawaiian thinking-I'm obviously Caucasian, so all I can do is tell you what I have learned from my Hawaiian friends and my teacher and the <i>kupunas</i> and the older people of Hawaii. <i>Aloha aina</i> is -- that's like part of the religion. That's part of the spirituality. It's love of the land, caring for the land...And we have a mountain here that is revered. It's known throughout Polynesian and considered sacred throughout Polynesia from all over." Mr. Sytze also stated his concerns about ATST potentially being used for the military purposes, "...if this is a military operation up here, I'm not taking a stand for or against what you are proposing doing...or against what is happening up there right now, but I'm just saying that if that is a military -- especially an offensive military type of operation up there, that there's going to be nuclear weapons targeted at it, and that should be taken into account in the environmental impact statement."		None		X	None
Mr. Don Kanahele	"...I don't feel comfortable about the selection of Haleakalā because of the importance of that mountain as well as other mountains here in the Hawaiian islands have to the people that live here. Not only to the Hawaiians by blood but the Hawaiians at heart. So for us this is something that is disconcerting. It's very serious." "Maui is a popular place for many, many reasons and to many, many people. And the impact of that popularity is felt in many areas by those who live here. There's a tremendous impact and, I guess, from my perspective I'm concerned about the cultural impact by those who live here and those who have been connected to these islands for many, many generations." "...I do, at this time, oppose the building of any telescope on Haleakalā."	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Foster Ampong	Mr. Ampong introduces himself and explains that he is "...born and raised and presently residing on the island of Maui. Normally I would just speak from my <i>na'au</i> , from my gut, because that's the way we speak the truth." Mr. Ampong also states his concerns about the proper disposal of waste and hazardous materials, "...I would like to be reassured with specifics. When you say properly contained and disposed of by private contractor, where exactly -- what is it contained in? Is it a 55-gallon barrel? Is this going to be trucked down to Kahului, put on a barge, and removed from the state? Is it going to be trucked down two miles from the summit and stored -- I think what we want to hear is the specific, something definitive about the hazardous material, how it's going to be removed, and where its going to be moved to." He continues, "...we need some honest, sincere, definitive explanations in the DEIS, period, before you go any further." Mr. Ampong notes that 15 speakers have been against ATST and that amounts to 99% of those who spoke out.		None		X	None
Mr. Haumea Hanakahi	Ms. Hanakahi explains that she is from the Island of Hawai'i but now resides on Maui. "The first thing that we found on the big island, many of us, is that we have to begin with a <i>pule</i> . The <i>pule</i> is filled with respect, and it's remembering that the <i>maunas</i> are not ours. That's not the ground of mankind. The <i>maunas</i> are the realm of <i>akua</i> . And so as we give that back to <i>akua</i> in recognition and acknowledgement, then that changes everything, and it gives it to <i>akua</i> to decide what is right and what will happen." "...And to arrogantly go and build upon a land that has always been considered sacred is a desecration. Period. Hawaiians have always held education as a noble endeavor, and this is not about astronomy. This is a land use issue." "Hawai'i is tired of hearing about astronomers behaving badly, whether it's on Mauna Kea or Haleakalā. So I open this in the hopes that truly we can make this <i>kākou</i> and inclusive. Make it something that we truly can reach out to each other's hearts about because truly we don't want to stop education, stop exploration. Polynesians were exploring these vast oceans by the same science of which you desecrate our mountain with." Ms. Hanakahi raises strong concerns about mercury being used for ATST as it was on Mauna Kea.		None		X	Need more comprehensive mitigation plans

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Jonah Kamakahi'i kaika o kalani Kapu	"I'm the seventh generation. I'm from Lahaina. I might be on the west side...but I still get something for say." Mr. Kapu continues, "...what if the thing get passed? What, next two years after that going have one other one coming up, one other one coming up just like Mauna Kea? Get four of five of them over there. No need one. I no like drive around Maui looking at Haleakalā and all you see is this big white ball. Come on now. I been on big island, I seen Mauna Kea, and it's like I just like broke that. I no care about this." "Right now this is not <i>pono</i> ." Mr. Kapu also states his concern about mercury contamination.	X	None			None
Mr. Kaleikoa Kaeo	"...A fool is anyone who disrespects, doesn't listen, doesn't adhere to what I have said many time before. So if I come here and I sound angry, I am. ... This is part of a large major campaign which have been perpetrated on my people for generations. Other native peoples have been pissed on and shit on across the islands, across the Pacific, across north America, across the world since the time of that great supposed European explorer Columbus. Looking for gold, god and glory, who cut off the hands of the native, who sicked his maddening dogs on the women and children for the sake of science." "That's your history. That's the history of our peoples that we have had to endure, and we still endure. But the good news is we still resist." "There is no -- I challenge NSF do one title insurance deed, find out how does the State of Hawaii through executive order -- they don't have title to the land. That's what the DLNR manages as part of -- they have no title to those lands. So they have unlawful control of these lands." "What the NSF is funding right now is exactly the continuation of this kind of mentality that somehow the <i>haole</i> world had some kind of right to what is not theirs because their science says so. ... If you got the title, put your paper down and I will walk away forever. I won't challenge it." "Our people will fight. ...If it means civil disobedience, that's what it's going to take."	X	None			None
Mr. Keahi Bustamente	"As a Hawaiian, I believe that I came from the stuff that that mountain came from. The creatures, the <i>koa</i> , the ' <i>ōhi'a</i> ', the <i>weke'ula</i> I came from that." "I would like all of you to know that on behalf of Na Kupuna o Maui, Patty Nishiyama, who couldn't make it today, have also submit written comments...we oppose the construction of building development of the ATST on Haleakalā." "I feel that this proposed project will exasperate (sic) adverse effects presently plaguing our community and the environment socially, culturally, and at the very core of our existence, spiritually."	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Richard McCarty	"This is your problem to show respect for this area. And to think about what is happening. Throughout history, if somebody wanted to desecrate a culture, what would they do? They would tear down the statues of their heroes, they'd go into their sacred spots and desecrate them. Because once you take that away, the culture is gone. They can't survive, once you take the special areas away and the things that are important to a culture." Mr. McCarty concludes, "...lets leave this site alone."	X	None			None
Mr. Walter Kanamu	"...the life of the land is perpetuated in righteousness. Not only in righteous but by the righteous. You see, from long time ago, I believe <i>akua</i> led the Hawaiians to this land. God led the Hawaiians to this land. He gave this land to the Hawaiians knowing that they were the people that would <i>mālama 'āina</i> and <i>aloha 'āina</i> . And that's why we're here today, because we are going to <i>mālama 'āina</i> and <i>aloha 'āina</i> ." "...I have a 501(c) (3) [non-profit corporation]. ... Your whole southern boundary 7,000 acres is mine. I have the lease for 7,000 acres of that land. Did you guys know that? From the summit down to 3,500 feet of Kahikinui, Hawaiian homelands, belongs to life living in this forest ecosystem [LIFE]. ... Today I'm introducing myself as the lessee for the land that abuts your boundary. Make sure you stay on your boundary now, and I want to see that. I want to see all the boundaries all drawn out because I went through your entire draft and it was very vague. ... In your draft statement, in your picture, you don't have one picture depicting Kahikinui right below you. ... when you get one spill, when your sewer systems overflows, when your hydraulic leaks, all of that stuff is going to affect me. ... In your entire proposal it says that everything you do will not have a significant affect. Well it's already affecting, and you have not even started." Mr. Kanamu adds more at the end of the meeting, "...and you be still and you be quiet and you listen, guess what you can hear? Everything that goes on in the observatory. You can hear the grinding; you can hear the rumbling in the earth. The sounds emitted up there travel all the way down. All the way down and affects us."	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Brianna Welker	“...What I have to say tonight is not for a permanent record. It's for you four who are sitting in front of us today. Because there is a huge thing that's lost in translation on paper. And that's the passion of everyone who stands before you. We're not going to be able to take that home on paper. You are the only people that are going to take that home.” “So I challenge you to look at me not with furrowed brows but really look at me. Not me personally. Everyone who is here now. Everyone who talked here tonight. And understand where they are coming from. Not hear where they are coming from, but try to feel it. Try to think of something that makes you half as passionate as all the people in this room. ... I am not <i>kanaka maoli</i> , but I was born here. This is my home. I can feel it up there. So the very last thing that I would challenge you to do is go to Haleakalā. Don't go to the site of your telescope. Go to the mountain that these people are talking about. I don't care how long you are here for. Find the time for it. And maybe, just maybe, you'll begin to understand what these people are talking about.”		None		X	None
Ms. Kamaile Kekahua	Ms. Kekahua makes the statement “...for the life of me I cannot understand how it is that Pele is for education in a way where she would allow and want for a structure that is 15 stories tall to be built right on top of what exactly she is.” “...A lot of times scientists that have come to Hawaii have tried to play exactly that role as a god, to dictate the ways that we do things instead of learning exactly from that ancient wisdom that was here prior to any kind of impact to Hawaii. Scientists have brought their foreign concepts here, some have worked, a lot hasn't. ... As it was earlier mentioned, is it for us? Because it is not for us. It is not for the Hawaiian people. ... And I just have to end too with saying I resist, I resist for my generation, I resist for my son's generation, and I resist as a <i>keiki</i> .”	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Mikahala Helm	"My concern is this: The meetings that are held -- that are scheduled today or tomorrow or the next day, I don't know which days you are having Section 106 meetings, are limited to those who have submitted...Mitigation and minimization proposals. My concern is where is the voice that you continue to hear this evening? Where is the voice in that DEIS, besides small little sentences that say the consultation occurred?" "And so my concern -- I hope you will address this -- is with how this whole DEIS comment period is being addressed, the sincerity in getting our communities input both from Section 106 for Hawaiians and non-Hawaiians alike, then I think that we need to be sure that in the environmental impact statement that these are clearly listed there. The oral testimony and everything must be listed there to show the depth of concern and support for avoiding this telescope on Haleakalā." Ms. Helm also raised the concern that the meetings were scheduled the same weekend of the Maui County Fair and the Super Ferry meeting.	X	None			None
Ms. Verna Kaiulani Nahulu	States that she speaks for the children of Maui, and that they should be allowed to learn all they can from this, "And as a Native Hawaiian, I see that there is so much that we were not allowed to learn because in our time our grandparents kept us tied in with their past and we were not allowed to go forward into our own future."		None	X		None
Ms. Vicki McCarty	"...I came from Lahaina. You've not had any meeting in Lahaina. You've ignored places on this island that have much to say about this telescope. You've been dismissive here this evening about families and communities and organizations that wait all year to raise money for their families and for their clubs and for their <i>keiki</i> at the fair. ... You don't understand this community, and you don't understand what is at stake here. Shame on you. It's a sacred place. It is a sacred place. It is a sacred place. Your own literature describes it as a sacred place." Ms. McCarty is also concerned about hazardous waste, "...What gives you or anyone the right to interfere with the cultural practices and the sacredness of this site? What gives you the right to put an emergency spill plan in place and perhaps deny all of the children that will come after us to enjoy the sacred place?"	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Nameaina Hshino	“...This place Haleakalā is house of the sun. You guys like look at the sun? What that prove to you, brah? Proving nothing. This place is a sacred place, brah. And what the thing going do for our culture, huh?...You know how pissed off it makes us, huh?...I no can see this thing passing because we get hard times already, this developing. Our water issues, us, we no can sustain right now. ... I'm going to try everything in my power for stop that thing from being built.” “You guys no more right for build up there. This is our <i>aina</i> .”	X	None			None

Table 9. Mayor Hannibal Tavares Community Center - September 28, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahookipa Olu Kamakawiwoole,	Kahookipa does not want ATST, and is skeptical of NFS commitment to potential programs for Native Hawaiians. Kahookipa makes the statement, "...Princess Pauhi in her personal monies cannot even provide for Native Hawaiian programs, the school that she provided for. She cannot even do that now. That same federal government is fighting us and telling us we cannot do that with somebody's personal money. But yet you guys are a federal agency saying you guys going to come to Maui and give us this program."	X	None			None
Mr. Frank Skowronski	Mr. Skowronski introduces himself and states that he is the principal of a small tech firm. He makes comparisons of size of ATST and states that it will be the tallest structure on Maui.		None		X	None
Mr. Penrod Vladika	Mr. Vladika is the Principal at Kalama Intermediate School. He formed astronomy club at school. He is very excited about ATST, says kids are excited too: "[a]nd that's what it's all about for me is to have this opportunity for children to learn and to discover." "I see there is a unification of science and the mountain also. It's called House of the Sun. You know, to me it's an addition, it's unifying in a way and it's very spiritual also to me as just an average citizen."		None	X		None
Mr. Richard Lucas	Mr. Lucas is from Haiku, Maui and voices his concern about the electrical power ATST will need to function, and asks what will NSF do to offset energy consumption.		None		X	None
Ms. Marilyn Parris	Ms. Parris is the Superintendent of Haleakalā National Park; "The park's purpose as established by law is to preserve the scenic character and associated Hawaiian culture, while simultaneously providing educational, inspirational, and recreational opportunities compatible with preserving the natural and cultural resources and values within the park." "Haleakalā is Maui's number one tourist destination and an integral part of the tourist-based island economy. The National Park Service's primary mission at Haleakalā National Park is to ensure these resources and values remain authentically represented and available for the enjoyment of all peoples in perpetuity. The preservation of Haleakalā nurtures the mind, body and spirit of these islands, her unique environment, and her many peoples." "It is the National Park Service's contention that this Draft EIS falls far short in adequately evaluation	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	the numerous cumulative impacts to our resources, our visitor's experiences, and our overall park operations with the construction of this ATST. Therefore, the National Parks Service must strongly oppose the construction of this facility adjacent to our boundary based on the information presented within the Draft EIS."					
Ms. Mary Evanson	Ms. Evanson read her public comment from a letter previously composed: Ms. Evanson feels protective of Haleakalā, "this project is so huge it will change Haleakalā forever. Please find another site." Again Ms. Evanson states that she is "deeply troubled" by the DEIS as it is full of errors. She is concerned that these errors will get circulated and perpetuated.	X	None			None
Ms. Mele Stokesberry	Ms. Stokesberry explains that the renderings of ATST are deceiving and that ATST is going to look much larger than it is portrayed in the renderings. She feels that ATST will have a tremendous impact on the native petrels, the view plane, and the overall serenity and sacredness of the mountain.	X	None			None
Ms. Suzanne Burns	Ms. Burns states that she is part-Hawaiian and explains that Haleakalā is a special, sacred place and that it should be left as it is.	X	None			None
Ms. Verna Nahulu,	Ms. Nahulu is a retired elementary school teacher from Keokea, Maui. She states that she speaks for the children of Maui, and that they should be allowed to learn all they can from the proposed ATST, "[a]nd as a Native Hawaiian, I see that there is so much that we were not allowed to learn because in our time our grandparents kept us tied in with their past and we were not allowed to go forward into our own future."		None	X		None

Table 10. Kula Community Center - September 29, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kahookipa Olu Kamakawiwoole	Kahookipa does not want ATST and is skeptical of NSF commitment to potential programs for Native Hawaiians. Kahookipa makes the statement, "...Princess Pauahi in her personal monies cannot even provide for Native Hawaiian programs, the school that she provided for. She cannot even do that now. That same federal government is fighting us and telling us we cannot do that with somebody's personal money. But yet you guys are a federal agency saying you guys going to come to Maui and give us this program."	X	None			None
Mr. Dick Mayer	Mr. Mayer is the Vice-President of the Kula Community Association and in his personal testimony he explains that misleading info was given during the scoping meetings, and that the public was lead to believe ATST would be 92 feet high rather than the current 143 ft height. Feels a master plan that includes the landowners at the summit, Hawaiians and other community members' needs to be drafted.		X		X	Locate ATST at a lower elevation on Haleakalā. "...looking at other sites on top of the mountain maybe a mile away from the summit three-quarters of a mile away, further to the south, maybe dropping it to down to 9,800 feet so it wouldn't stick above the top of the mountain

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Michael Howden	Mr. Howden is from Kula and is a <i>haumana</i> with Papa Henry Auwai. He states that Pu'u Kolekole is a sacred "place of prayer and inner attunement." "I find this incredible that this European scientific mindset would want to impose upon a sacred landscape what can only be considered in spiritual terms really a monstrosity. This is a place of prayer. It's a place sacred for ceremony. And I think at some point, this madness toward building and accumulation and the carelessness with which this is approached in terms of imposing on this landscape something that would be not only cultural desecration, but an aesthetic and spiritual desecration."	X	None			None
Mr. Rizzo	Mr. Rizzo has accompanied hundreds of school kids on field trips to Haleakalā, "But what I have seen many, many times are just a small group of these children that are very excited and just really in awe of what's going on up there at the different facilities. And I just think it's an important thing. I believe that this is a great opportunity" "It's opportunity knocking at the door to have a facility like this. How appropriate, a solar observatory state-of-the-art up at the house of the sun." Mr. Rizzo asks how much of the mountain is sacred.		X	X		"If it could go up in an area around the summit that is respectful to the Hawaiian people...I think that would be a great thing for everybody."
Mr. Warren Shibuya	Mr. Shibuya serves on Maui's General Plan Advisory Committee. The following list of mitigation suggestions made up Mr. Shibuya's comments: 1) Contribute to and subscribe to a work force development program... 2)Employ Maui residents as much as possible and develop ATST work force to a close working relationship 3). Establish a Maui solar and Hawaiian Cultural Center featuring staff multimedia facilities and systems to share information, educate and ignite the passion and encourage Maui students getting needed skills and seek ATST employment 4) ATST adopt and enter in written contract a sunset for the ATST structure and program. Suggest at least four cycles with each cycle is 23.5 years each cycle for a total of approximately 90 years. This sunset clause is precedent setting and requires ATST to remove ATST structures and restore use of summit grounds to original sacred configuration. 5) All streets and facility names be Hawaiian.		X		X	See Summary and View of Cultural Concerns

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Leslie Ann Bruce	Ms. Bruce is from Hana: “[t]his proposed use of Haleakalā summit for another telescope is undesirable, culturally offensive and ethically questionable. It’s undesirable because it is a further covering of our mountain's open space and special viewscapes. It destroys our sense of place. It is culturally offensive because it further intrudes on our sacred Hawaiian <i>aina</i> . Haleakalā, as we all know, has mythological significance of the highest value. It is a storied place for the island's namesake, Māui, who has Pan Pacific importance to many Polynesian cultures in addition to Hawaiian culture. People I know on the island, including myself, feel hurt, offended an invaded by outsiders' intrusions on our <i>wahipana</i> , our sacred places, that lose their pristine character and cultural significance by being used for large, obtrusive structures that obliterate the emptiness we value so highly on our mountaintop. “	X	None			None
Ms. Mary Evanson	Ms. Evanson, on behalf of the Friends of Haleakalā National Park, read her public comment from a letter previously composed; she feels protective of Haleakalā, “this project is so huge it will change Haleakalā forever. Please find another site.” Again Ms. Evanson states that she is “deeply troubled” by the DEIS as it is full of errors. She is concerned that these errors will get circulated and perpetuated.	X	None			None
Ms. Mele Stokesberry	Ms. Stokesberry submitted her testimony via e-mail: “...it must not be built at this location. Its tremendous size cannot be placed on the summit of Haleakalā without irreversible harm of a very serious nature to the endangered petrels whose burrows are all surround the proposed sites.” “ATST would also cause ruinous harm to the view planes, serenity and the sacredness of the mountain and it’s yet not fully characterized harm to the entire summit environment due to the huge excavation and disturbance it will invade.”	X	None			None
Ms. Verna Kai‘ulani Nahulu	Ms. Nahulu is Native Hawaiian and from Keokea, “...I would like to say that my Hawaiian ancestors felt it was so important to know about the sun, to know about the stars and to know the skies, because when we traveled throughout the Pacific, through Easter Island, to Tahiti, to far places, okay, to far places, that it was necessary to know about the sun.” Also states that she is a channeler of Pele and explains that, “...very, very early on, I asked her [Pele] what’s your take on the ATST. And she says I am strongly in favor of it. She said do everything you can to have them be installed at the summit because I [Pele] feel that Haleakalā is for education.” For those people who think Pele’s home is Haleakalā, Ms. Nahulu says, “...Pele’s home is in Halemaumau [on the Island of Hawaii].” Ms. Nahulu		None	X		None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	makes a statement in response to comments about the telescopes and Science City being in one's direct view, "I've been to Haleakalā. In order to see Science City, I have to go up further to the 10,000-foot level to see Science City. It is in the back. I see only the summit below me, and I've been up there many times. So I think it is a mistake saying that it is in our faces because it certainly is not. I have to go up to Science City to see those things, and I do."					

Table 11. Maui County Cultural Resource Commission - October 12, 2006

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Mr. Bill Evanson	Mr. Evanson worked in Haleakalā National Park for a time and as a result has walked the entire rim of the crater several times. He describes Haleakalā's beauty, "I would come up over the rise...and look down into Kīpahulu Valley on a clear day and I understand how and why Hawaiians chant because you get these feelings inside you after looking at the beauty and it just like comes rushing out and the mountain is as it has been said celebrated in <i>mo'olelo</i> and <i>mele</i> and <i>hula</i> and it's a --it's about grandeur, its beauty, its majestic beauty, its open space, it's scenic, and wilderness values, as we like to call them these days." "...Lots of people appreciate open space, as our island becomes more developed, those are the places we go to seek refuge and get spiritual replenishment." Mr. Evanson feels ATST will be intrusive to spiritual practices atop Haleakalā.	X	None			None
Mr. Foster Ampong for Na Kupuna O Maui	Mr. Ampong considers Haleakalā sacred and is concerned about safety.	X	None			None
Mr. Michael Howden	Mr. Howden was taught by Papa Henry Auwai. He was taught to respect natural and cultural resources. Mr. Howden feels that the extremely sacred nature of Pu'u Kolekole was not conveyed properly in the cultural evaluation.	X	None			None
Mr. Stanley H. Ki'ope Raymond	Mr. Raymond states that he believes the cultural evaluation (Maxwell 2006) is inadequate and does not adhere to the Hawaii State Guidelines of the Office of Environmental Quality Control for assessing cultural impacts. He feels that the cultural evaluation does not adequately convey the sacredness of Haleakalā. Mr. Raymond describes a bias that is conveyed by the author that is inappropriate in this type of document. Therefore he believes that the cultural impacts cannot be accurately conveyed by the current cultural evaluation. Mr. Raymond goes on to explain that there are two acts that cause "spiritual pain" regarding construction of ATST. The first, he describes, is the actual excavation of the aina or lava. To Hawaiians, the lava is the " <i>kino lau</i> or body form of Pele". "...Therefore, all of the rock on the mountain has a sacred aspect; intrusive digging is a desecration." Secondly, he thinks construction of ATST will cause "...the	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	death of an <i>aumakua</i> .” He is concerned that the ‘ua‘u or the Native Petrel may be harmed or killed due to construction of ATST. Mr. Raymond explains the ‘ua‘u is the only seabird on the U.S. Endangered Species list. Mr. Raymond continues explaining that ATST will be in relatively close proximity to the east <i>ahu</i> , less than 100 feet away, and although the views down slope from both <i>ahu</i> are pristine, the view in the opposite direction is strongly impacted by human development. He explains that an entire 360 degrees viewplane from both <i>ahu</i> is important and that does not exist and the quietness of the area is disrupted by the noise of chillers from another facility. Mr. Raymond considers the future community at Kahikinui and what they might be dealing with having ATST in their direct view.					
Mr. Tom Cannon	Mr. Cannon knows Haleakalā as a place of legends significant to Hawaiian culture and history. He recalls the legend of the demi-god Māui who snared the sun so that it would move more slowly across the sky so his mother could dry her <i>kapa</i> . He goes on to say that the summit of Haleakalā is known to have many, many legends, songs and <i>hula</i> written about it and for it, he continues, “I feel that there is no more culturally significant place in Maui County, in the U.S., or in Polynesia that the summit of Haleakalā.” Mr. Cannon states that Haleakalā is a legendary mountain, “I understand that it is important to study the sun, but not if it means destroying the Hawaiian sense of place associated with Haleakalā. It is not worth it.”	X	None			None
Ms. Jaydeena	Does not want ATST built on Haleakalā.	X	None			None
Ms. Lei‘ohu Ryder	Ms. Ryder introduces herself and explains that she is a cultural and spiritual advisor. She calls Haleakalā “House of the Shadow of the Sun” and “House of the Sun”. Ms. Ryder states that her great, great grandfather came to the island of Hawaii from Kauai and trained on Haleakalā in “sacred protocols and prayers”. Ms. Ryder describes Haleakalā: “Haleakalā is a symbol of primordial life and humanity's sacred essence...”	X	None			None
Ms. Mary Evanson	Ms. Evanson feels the construction and presence of ATST will “adversely change Haleakalā forever causing irrevocable loss of natural, cultural and scenic resources.” Ms. Evanson is concerned about the ‘ua‘u birds that nest in the area and fears excavation efforts will cause the collapse of ‘ua‘u burrows. She recalls Haleakalā being known for its high quality of basalt	X	None			None

Agency/ Individual	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
	and speaks of the adze quarries in the crater.					
Ms. Mikahala Helm	Ms. Helm feels ATST is a threat to Haleakalā, "...a threat to our people, to our Hawaiian culture, because we know our kuleana is to protect this sacred mountain." Ms. Helm feels the NSF has not made an adequate assessment of the impacts of ATST in its DEIS. Ms. Helm speaks of song and dances that honor Haleakalā and mentions "Aloha 'ia no 'o Maui" by composer Auntie Alice Johnson: "Kilakila Haleakalā, Majestic is Haleakalā; Kuahiwi nani o Maui, Lovely mountain of Maui; Kaulana kou inoa puni o Hawaii, Its name is famous throughout Hawaii; I ke alanui kike'eke'e, And the road that zigzags."	X	None			None
Ms. Suzanne Burns	Ms. Burns is offended by the use of the summit of Haleakalā and expresses it in the following statement: "I feel like my mountain [is] a rape victim and we're asking the friends of the rapist to stop raping our mountain, and they're saying, 'Oh, by the way, do you mind if we rape it one more time?' That's what it feels like."	X	None			None
Ms. Uilani Kapu	Ms. Kapu explains that people come from Aotearoa, India and all over the world to visit Haleakalā and they visit for spiritual purposes. Ms. Kapu feels that the current and proposed scientific use of Haleakalā is a desecration to its sacred nature.	X	None			None
Ms. Vicki McCarty	Ms. McCarty explains that Haleakalā is a sacred mountain and you don't enhance Hawaiian culture by desecration of a sacred site. Ms. McCarty mentions the cultural evaluation and that is states that Haleakalā was <i>kapu</i> and only for the Gods use. She explains that this project will desecrate an already damaged area. Ms. McCarty states that the West Maui community was not adequately represented.	X	None			None

Table 12. Formal Letters

Agency/ Individual	Date	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
County of Maui, Dept. of Planning, Cultural Resource Commission Comments - Mike Foley, Planning Director	23-Oct-2006	“Based on the information contained in the Draft EIS, and testimony presented by the applicant and the public, the Commission voted to make the following recommendation. The Commission strongly recommends adoption of the No Action alternative contained within the Draft EIS. The basis for this recommendation is as follows: 1. Haleakalā is a sacred place to the Native Hawaiian people. 2. The proposed telescope would be a desecration of the physical and spiritual manifestation of the cultural/historical <i>mana</i> of the Native Hawaiians. 3. The proposed telescope is not consistent with the designation of the summit of Haleakalā as a Traditional Cultural Place or Property (TCP) and its eligibility for listing on the National Register of Historic Places. 4. The proposed telescope could impact the nearby burrows of ‘ua ‘u birds, which are an endangered species.”	X	None			None
Friends of Haleakalā National - Ms. Mary Evanson, President	18-Oct-2006	“The friends of Haleakalā National Park (FHNP) strongly opposes location the Advanced Technology Solar Telescope (ATST) Project on Haleakalā.” The cultural resource evaluation “lacks credibility as an unbiased expression of the thinking of native Hawaiians.” FHNP states, “This project will adversely change the summit of Haleakalā forever, causing irrevocable loss of natural, cultural and scenic resources” The FHNP has concerns for the endangered petrel or ‘ua ‘u and how construction of ATST might affect their nesting sites. The FHNP also comments on the conclusions contained in the DEIS, pages 4-6 to 4-8. FHNP states that the DEIS does not take into account the view of the Hawaiian community, that construction operations will cause impacts that constitute defilement of the cultural and spiritual aspects of Haleakalā. FHNP reflects the Hawaiian community’s view stating that these impacts cannot be mitigated.	X	None			None
Kaiini (Kimo) Kaloi, Director, Office of Hawaiian Relations, Dept. of the	31-Oct-2006	The Office of Hawaiian Relations (OHR) comments reflected the National Parks concerns on natural cultural, historic and economic park resources. OHR requested a meeting with NSF due to numerous other concerns.		N/A		X	N/A

Agency/ Individual	Date	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Interior							
Mary Evanson	23-Oct-2006	In this letter Ms. Evanson calls to attention the inadequacies and major geographical errors of the Cultural Review (Appendix F of the DEIS).		None		X	None
Mary Evanson	29-Sep-2006	Ms. Evanson read her public comment from a letter previously composed: Ms. Evanson feels protective of Haleakalā, “this project is so huge it will change Haleakalā forever. Please find another site.” Again Ms. Evanson states that she is “deeply troubled” by the DEIS as it is full of errors. She is concerned that these errors will get circulated and perpetuated. (Letter drafted for public hearing)	X	None			None
Mary Evanson	13-Mar-2006	This letter specifically addresses the errors in the Cultural Resource Evaluation.		None		X	None
Maui Cultural Lands, Inc. Edward R.N. Lindsey Jr.	23-Oct-2006	“[i]t is with great concern that many of us <i>Kanaka Maoli</i> are compelled to give testimony against a project that is so destructive to the well being of the Hawaiian culture and its sacred sites.” “When a culture depends on these natural wonders of their environment for survival and reverent communications to a power higher than themselves, all care must be given to this practice. Haleakalā is noted throughout Polynesia as on of a most sacred area. There are stories, legends, events, but most important, prayers by generations of <i>Kahunas</i> . As many visitors can testify there is a life force within these rocks that have influenced their lives.”	X	None			None
Mr. William D. Evanson	23-Oct-2006	“I believe the DEIS is inadequate and/or insufficient. It is based on faulty assumptions and biased in its conclusion...” Mr. Evanson continues, “Negative impact to historic and cultural significance downplayed...” He feels that the cultural evaluation lacked significant <i>mo‘olelo</i> , <i>oli</i> , and <i>hula</i> references to Haleakalā. And he explains, “the fact that the...words used most often in conjunction with Haleakalā are “ <i>kila kila</i> ” (majestic, tall, strong), “ <i>ha‘aheo</i> ” (pride) and “ <i>hanohano</i> ” (glorious, magnificent, stately) [proves] Haleakalā is held in high esteem and with great reverence in native Hawaiian history and culture.”	X	None			None

Agency/ Individual	Date	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Ms. Mikahala Helm	21-Sep-2006	Ms. Helm proposed “avoidance”, “as Hawaiians, loving our land means caring for it. This is essential especially for places like Haleakalā.” “How will you address negative impacts on <i>kupuna</i> ? Hawaiians and community members who have testified against ATST?” “Why was testimony left out of DEIS?” “For centuries the Hawaiian culture has flourished through oral traditions” Ms. Helm feels negative testimonies are being ignored and left out. In her closing statement, Ms. Helm states, “I do not feel that cultural protocol and training staff is enough to rectify the harm that is proposed by the building on the ATST.” She continues, “Respect Haleakalā and leave it in its beauty. It is essential to our Hawaiian people, to our culture and practices...”	X	None			None
Office of Hawaiian Affairs - Clyde W. Nāmu‘o	2-Oct-2006	The Office of Hawaiian Affairs (OHA) raises the concern that “...the DEIS was not used as a decision-making tool prior to NFS's decision to build the ATST at Haleakalā, as required by the National Environmental Policy Act (NEPA) and the Council for Environmental Quality Control (CEQ) regulations. In addition, the alternatives presented in the DEIS do not represent a true opportunity for NSF to make an informed choice of location for the ATST, nor for adequate public input in the process.” OHA’s suggestion is that NSF draft a supplemental DEIS that includes the final three potential sites -- Haleakalā, Big Bear and La Palma -- so a comparison can be made. OHA states, “[u]ntil NSF completes a proper environmental review for the ATST project, OHA opposes this EIS and the project.”	X	N/A			N/A
Professor (Emeritus) Dick Mayer	Oct.22 2006	Professor Mayer’s view on ATST and the DEIS is that, in general, the DEIS does not address issues adequately, does not meet OEQC standards and contains a noticeable bias. Professor Mayer is concerned about the height of telescope and makes a comparison of the ATST placement on Haleakalā the equivalent to placing it at the Mall in Washington DC, or in front of the Lincoln Memorial, or on Calvary Hill in the city of Jerusalem, or besides the Wailing Wall in Jerusalem, or in the city of Mecca. Professor Mayer sees a problem with land ownership at the proposed site.	X	None			None
Richard Lucas,	23-Oct-2006	Main feelings from this group: Haleakalā is a sacred, spiritual place and like a church or holy city, building a structure on it would be a	X	None			None

Agency/ Individual	Date	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
Kathleen McDuff, Michael Lucas, Sean McDuff, Hanna Bearden		desecration that could not be mitigated in any way.					
State Historic Preservation Division - Mr. Peter Young	Oct.23 2006	“We believe that the cumulative impacts of the project have not been addressed regarding mitigation, and that significant impacts to the historic district/property and traditional cultural property of Haleakalā are not adequately addressed in the document [DEIS].” “Haleakalā Summit unquestionably represents a Traditional Cultural Property.” “We believe additional consultation regarding any newly proposed mitigation of the cumulative impacts posed by the project must occur prior to preparation of a Final Draft EIS and/or Memorandum of Agreement of adverse effect.” (Log No: 2006, Doc No:0610MK17)		None		X	None
U.S. Dept. of the Interior, National Park Service - Marilyn H. Parris, Superintendent	19-Oct-2006	“It is the National Park Services contention this Draft Environmental Impact Statement (DEIS) fall far short in adequacy evaluating the numerous cumulative, adverse impacts to the park's resources, our visitors' experiences, and overall park operations.” The DEIS does not address the fact that the proposed project area, the entire summit area of Haleakalā, is located in the Crater Historic District (SIHP# 50-50-11/12-1739), listed on the National Register of Historic Places. DEIS does not address the fact that the NPS owns the roadway from the park entrance to the summit and this roadway is eligible for listing under the Historic American Engineering Record (HAER). NPS stated that the EIS does not discuss how ATST construction will impact daily park operations. NPS continues and explains that the DEIS needs to take into account the entire summit area, the Crater Historic District and not just Pu'u Kolekole. In conclusion, “the NPS must strongly oppose the construction of this facility adjacent to HALE boundary based on the information presented within this DEIS.” NPS suggested a supplemental DEIS and asked to be contacted during the preparation of it.	X	N/A			N/A

Agency/ Individual	Date	Summary of View and Cultural Concerns	No Action	Mitigation Suggestions	For ATST	Not Stated	Mitigation Comments
U.S. Environmental Protection Agency, Region IX - Laura Fugii for Enrique Manzanilla, Director, Communities and Ecosystems Division	30-Oct-2006	The EPA commented on the DEIS and concluded that it had "Insufficient Information". The EPA explains that it is "...concerned about the negative impacts associated with locating additional structures on a site that is considered to be sacred to the Native Hawaiians." The EPA suggests that the Final EIS should include more information on stated topics and Memoranda of Agreement (MOA) for mitigation measures between NSF and the community. EPA suggests the NSF discuss and implement additional mitigation measures to address historical and cultural impacts, "The FEIS should discuss in detail all activities associated with compliance in conjunction with the NHPA. The FEIS should include information about the Section 106 process, consultations with the Native Hawaiians, and references to any MOA which might be implemented at a later date." "EPA recommends that the FEIS describe suggestions from Native Hawaiians and local community and the ways in which the agency will respond to these concerns. Resolution strategies and mitigation plans should be discussed in detail. Mitigation measures could include funding for Hawaiian cultural education programs, improved cultural centers, and research on sacred sites within HO." Concerning the topography "EPA recommends NSF consult with Native Hawaiian organizations and HALE [Haleakalā National Park] personnel concerning the reconstruction of the Pu'u Kolehaha cone." Regarding the endangered U'au, "The NSF should work closely with biologists at HALE and the US Fish and Wildlife Service to ensure that the video surveillance does not adversely impact this endangered species." Regarding environmental justice, "The FEIS should include a more thorough and detailed analysis of impacts on the Native Hawaiians, a minority population. The NSF should conduct an Environmental Justice Screening Analysis to more clearly and thoroughly bring into focus the environmental justice impacts on the Proposed Action."		N/A		X	N/A

5.1 Analysis and Summary of Public Testimonies and Formal Letters

The above public testimonies and letters were evaluated and analyzed in an effort to extract the cultural content and personal views of the community members as well as bring to light reoccurring themes noted throughout the testimonies. Testimonies include community members of Hawaiian and non-Hawaiian descent.

5.1.1 Opposition to the Proposed Advanced Technology Solar Telescope (ATST)

It becomes clear that there is an overwhelming opposition to the proposed ATST at the Haleakalā location by those who offered public testimony and submitted formal letters. Testimonies against the construction of the proposed ATST were very emotional, reflecting a deep sense of concern, responsibility, and attachment to Haleakalā. As part of their cultural heritage, Native Hawaiians believe that Haleakalā is a sacred mountain: a *wahi pana* or legendary place, and *wao akua*, a place for the gods and spirits. Haleakalā is a place that was *kapu* to commoners in traditional times. Today, there are Native Hawaiians and non-Hawaiians alike who go to the summit of Haleakalā for solitude, prayer, ceremony, and inner attunement.

Construction of the proposed ATST atop Haleakalā is considered the desecration of a sacred mountain by most who offered testimony. Many considered the proposed project a personal affront, an insult and an attack on their culture. As reflected in these testimonies, the majority of those within the Hawaiian community who participated in the scoping and public comment period of the draft review process strongly oppose the proposed ATST atop Haleakalā.

5.1.2 Support for Proposed Advanced Technology Solar Telescope (ATST)

Support for the proposed ATST came from four individuals who felt excited about having a world class solar telescope here on Maui. These individuals explained that a solar telescope could not have a more appropriate location than at the House of the Sun, and remind us that Hawaiians were expert astronomers and made their way throughout Polynesia using the sun and stars as guides. The testimonies supporting ATST lean heavily towards using the telescope to encourage education in the sciences, and to encourage discovery. It was said that in the past traditional Hawaiian beliefs had discouraged the learning of new knowledge and today's children have the right and should have the opportunity to learn as much as they can. Three of the four individuals supporting the proposed ATST explain that they have worked with children and take them on field trips up to Haleakalā to see the observatories. They further describe how excited the children are and how eager they are to learn and discover. Those in support of ATST see it as an incredible opportunity to unite Haleakalā and the sciences.

5.2 Petitions Supporting and Opposing ATST

Petitions supporting and opposing the proposed ATST were circulated during different phases of project planning. Although the individuals or organizations responsible for circulating petitions in support of ATST are unknown, Kilakila O Haleakaāa (a non-profit group formed to protect Haleakalā from further development) circulated the petitions opposing ATST. Only petitions collected after DEIS publication have been represented in this report, as they represent the majority of petitions collected.

There were three different petitions circulated during the public comment period for the DEIS:

1. A petition stating the individuals support of ATST (Figure 4);
2. A petition (Kilakila O Haleakalā Petition A) opposing ATST, supporting the “No Action Alternative” as described in the DEIS (NSF 2006) (Figure 5); and
3. A petition (Kilakila O Haleakalā Petition B) B, opposing ATST , supporting the “No Action Alternative” with a clause that states, “I am interested in becoming a consulting party regarding the religious [word religious is crossed out] and cultural significance of Haleakalā, as a traditional cultural place, through the Section 106 process” (Figure 6).

Dr. Craig B. Foltz
National Science Foundation
4201 Wilson Boulevard, Room 1045
Arlington, VA 22230

RE: Advanced Technology Solar Telescope on Haleakalā, Maui

Dear Dr. Foltz:

I SUPPORT the proposed construction of the ATST on Haleakalā. I believe the proposed project will result in major advances in solar research toward understanding space weather and how it affects life on Earth. It will be beneficial for educational outreach and will be a source of continued employment in the hi-tech field already on Maui. In summary, ATST is a worthy project for Maui.

Figure 4. Petition from an unknown distributor in support of ATST.

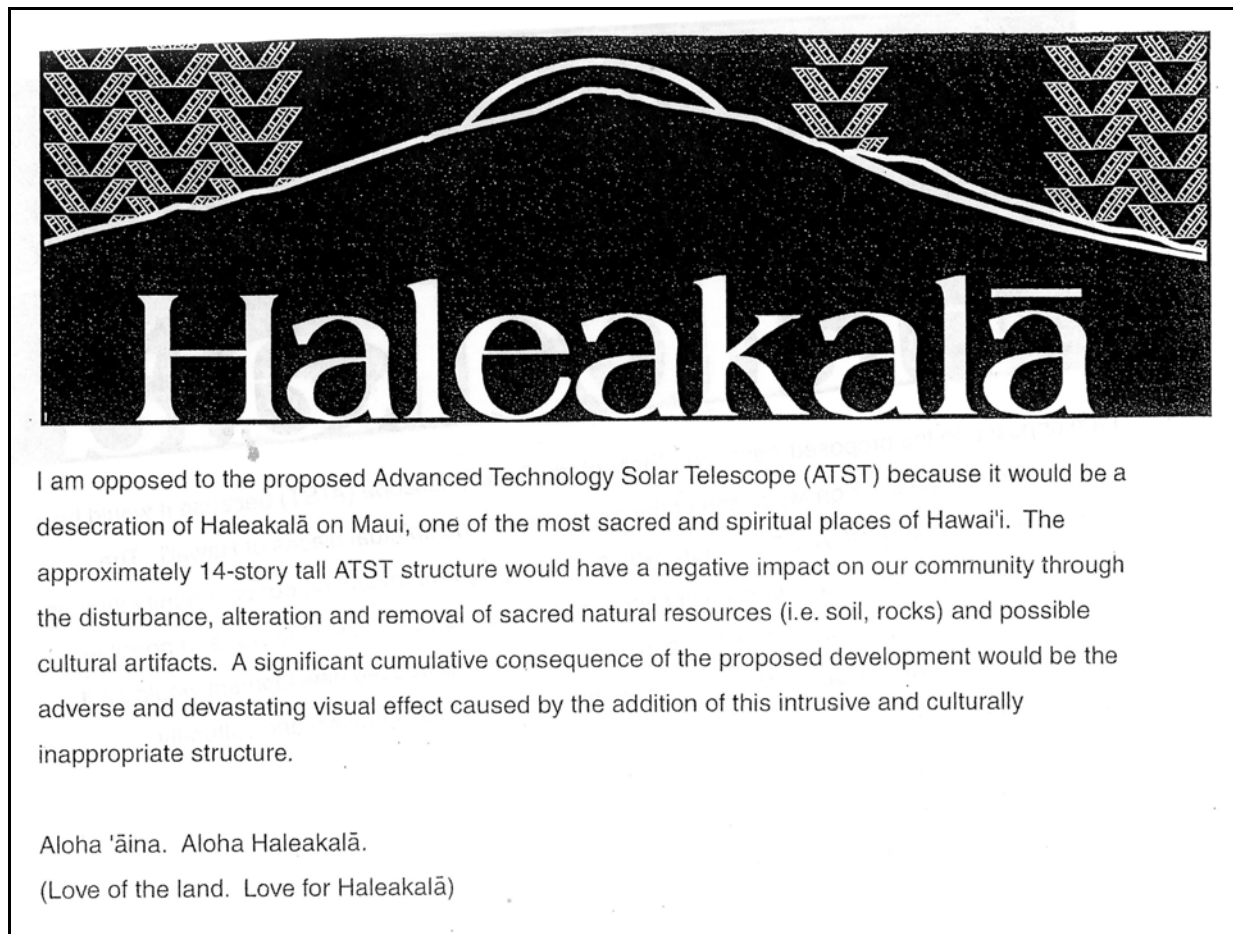


Figure 5. Kilakila O Haleakalā Petition A, opposing the proposed ATST atop Haleakalā.

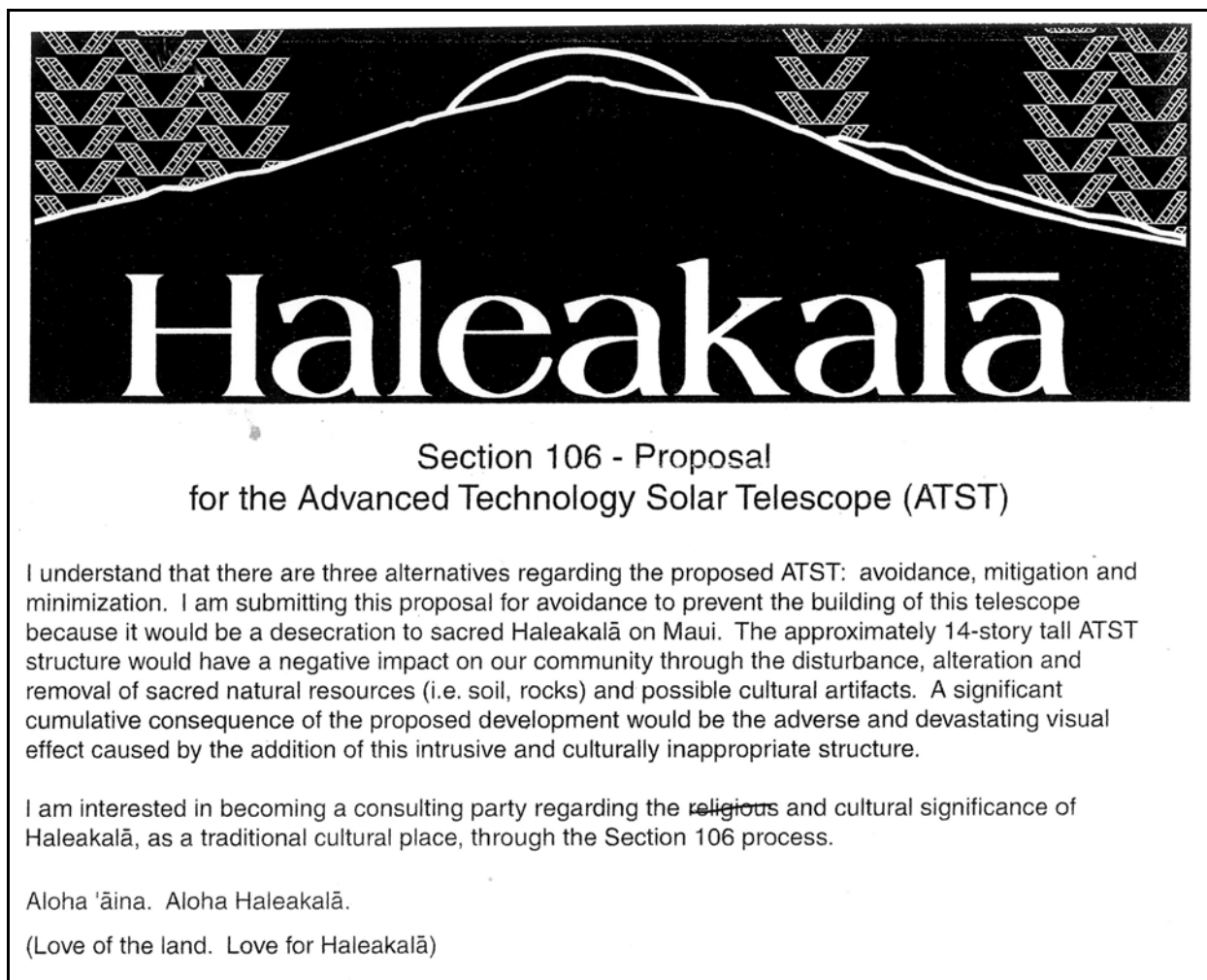


Figure 6. Kilakila O Haleakalā Petition B; opposing the proposed ATST atop Haleakalā with Section 106 Clause.

5.2.1 Cultural Implications of Petitions

Petitions from individuals in support of ATST totaled 105 (Figure 4, see Appendix A ATST Petition – Unknown Origin). A total of 691 individual signed the petitions circulated by Kilakila O Haleakalā. Of the people who responded to the petitions opposing the construction of the proposed ATST, 632 signed Petition A (Figure 5, see Appendix B Kilakila O Haleakalā Petition: Table B-1), and a total of 59 individuals signed petition B (Figure 6, Appendix B Kilakila O Haleakalā Petition: Table B-2).

In summary, the petitions represent a majority that is deeply opposed to the proposed ATST project. The theme in which opposition is based is identical to the theme revealed in public testimonies. It is the idea that a structure such as ATST is “culturally inappropriate” atop Haleakalā because it is considered a sacred mountain. Although there are those who support ATST because of its enormous potential for advances in solar research and potential educational value on a local scale, its strong opposition cannot be ignored. It is believed that negative impacts to natural resources; viewplanes, soil, rocks, and cultural artifacts will be devastating. Overall, construction of ATST is viewed as a desecration of Haleakalā.

Section 6 Community Contacts and Consultations

As a part of the current study, an additional effort was made to gather supplementary information, community input and knowledge of the summit area in order to more adequately address the impacts of the proposed ATST facility atop Haleakalā. The following section presents the results of the community consultations that were conducted by Cultural Surveys Hawai'i staff. The following table includes an overview of preliminary results of the community consultations.

Table 13. Preliminary Results of Community Consultations

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Ms. Walette Pelegrino	Cooperative Education Program Coordinator-Maui Community College	Y	S	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Ms. Rose Marie Duey	Alu Like, Inc.	D	N	CSH sent letter of inquiry. Ms. Duey states that Alu Like cannot comment on the subject. Ms. Duey recommended talking with Hokulani Holt-Padilla, Charlie Maxwell or Keali'i Taua for more specific cultural practices information.
Ms. Rose Marie Duey	Kama'āina	Y	S	As an individual Ms. Duey is opposed to ATST due to the sacred beliefs attached to Haleakalā.
Ms. Sheila Ople	A'o A'o O Na Loko I'a O Maui	U		CSH sent letter of inquiry. Letter of inquiry was returned 3/19.
Ms. Vanessa Medeiros	Dept. of Hawaiian Homelands	N		CSH sent letter of inquiry.

² **Key:**

Y=Yes

N=No

A=Attempted (at least 3 attempts were made to contact individual, with no response)

S=Some knowledge of project area

D=Declined to comment

U=Unable to contact, i.e., no phone or forwarding address, phone number unknown

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
				Mr. John Hirota explained that Ms. Medeiros resigned and no one has filled her position yet. Mr. Hirota did refer me to Darrell Yagodich-Planner with DHHL, Linda Chinn-Land Management, Larry Fumida and Looyde Yonenaka-Information and Relations. CSH personnel spoke with Mr. Yonenaka and he explained that the DHHL has not made any official comments on the proposed ATST. E-mailed Mr. Yonenaka's secretary letter of inquiry.
Mr. Hinano Rodrigues	Dept. of Land and Natural Resources, SHPD	Y	Y	CSH sent letter of inquiry. E-mailed response, see Section 6.1.
Mr. Akoni Akana	Executive Director, Friends of Moku'ula	D		CHS lent letter of inquiry.
Mr. Patrick Ryan	Fishpond Ohana	Y	N	CHS lent letter of inquiry. Mr. Ryan stated that he does not know of any cultural practices or resources atop Haleakalā. He explained that he only knows about fishponds in Kihei.
Mr. Brian Jenkins	Friends of Polipoli, President	Y	Y	CSH sent letter of inquiry. E-mailed response, see Section 6.1.
Mr. Jim Wagele	Hawaiian Community Assets, Inc.	A		CSH sent letter of inquiry. Forwarded letter to board members.

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Mr. Clifford Nae'ole	Hawaiian Cultural Advisor, Ritz-Carlton Resorts	A		CSH sent letter of inquiry.
Kekealani Ishizaka	Hawaiian Homes Waiehu Kou 1	A		CSH sent letter of inquiry. Contacted Department of Hawaiian Homes Information and Community Relations and asked them to forward CSH Maui office phone number to Maui homestead community presidents.
Ms. Blossom Feiteira	Hui Kako'o 'Aina Ho'opulapula and Na Po'e Kokua	U		CSH sent letter of inquiry.
Mr. Edward Ayau	Hui Malama I Na Kupuna o Hawaii Nei	A		CSH e-mailed letter of inquiry.
Ms. Julie Oliveira	Hui No Ke Ola Pono	Y	N	CSH sent letter of inquiry.
Mr. Don Atai	Hui o Va'a Kaulua	A		CSH sent letter of inquiry.
Ms. Kehaulani Filimoeatu	Hui of Hawaiians	Y	N	CSH sent letter of inquiry.
Ms. Roselle Bailey	Ka Imi Na'auao 'O Hawai'i Nei	Y	Y	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Mr. Norman Abihai	Kahikinui Homesteaders Community President	Y	S	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Ms. C. Mikahala Kermabon	Kahikinui Resident	Y	N	Informal interview, see Section 6.1.
Mr. Quintin Kiili	Kahikinui Resident	Y	N	Informal interview, see Section 6.1.
Mr. Aimoku Pali and Mrs. Lehua Pali	Kahikinui Resident	Y	S	Informal interview, see Section 6.1.
Mr. Earl Mo Moler	Kahikinui Resident	Y	S	Informal interview, see Section 6.1.
Ms. Donna Sterling	Kahikinui Resident	Y	S	Informal interview, see Section 6.1.

Name	Affiliation	Contacted²	Personal Knowledge	Comments
Ms. Chad Newman	Kahikinui Resident	Y	N	Informal interview, see Section 6.1.
Mr. Charlie Lindsey	Kaho'olawe Island Reserve Commission	Y	N	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Dr. Rod Chamberlain	Kamehameha Schools Oahu Campus	Y	N	CSH sent letter of inquiry. Mr. Chamberlain referred CSH to new Maui headmaster, Ms. LeeAnn Delima.
Ms. LeeAnn Delima	Kamehameha Schools Maui Campus	Y	N	CSH sent letter of inquiry.
Ms. Dancine Takahashi	Kamehameha Schools Alumni	Y	N	CSH sent letter of inquiry.
Robin Newhouse	Keokea Hawaiian Homes	U		CSH sent letter of inquiry. Contacted Department of Hawaiian Homes Information and Community Relations and asked them to forward CSH Maui office phone number to Maui homestead community presidents.
Mr. Alan Kaufman	Kula Community Association President	Y	Y	CSH sent letter of inquiry. E-mailed response, see Section 6.1.
Ms. Uilani Kapu	Kuleana Ku'ikahi LLC	Y	Y	CSH sent letter of inquiry. Ms. Kapu composed and mailed letter but CSH staff did not receive it.
Ms. Kamaile Sombelon	Lokahi Pacific	D		
Mr. Lui Hokoana	Maui Community College and Hawaiian Civic Club	A		CSH sent letter of inquiry. Mr. Hokoana gave testimony at public meeting.

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Mr. Stan Solamillo	Maui County Cultural Resource Commission	Y	N	CSH sent letter of inquiry. On March 1, 2007 CSH staff members Colleen Dagan and Tanya Lee-Greig presented project to the Cultural Resource Commission seeking public comment. There was no public turnout. Commission members suggested re-presenting it with at least one month's notice.
Ms. Patty Nishiyama	Na Kupuna O Maui	A		CSH sent letter of inquiry.
Ms. Lei Ishikawa	Na Leo Pulama	A		CSH sent letter of inquiry.
Ms. Ohua Morando	Na Pua No'eau	Y	N	CSH sent letter of inquiry. Ms. Morando said she was collecting information for CSH, but none has been received.
Mr. David Keala	Native Hawaiian Educational Council	U		CSH sent letter of inquiry.
Ms. Velma Mariano	Paukukalo Hawaiian Homestead Community Association	U		CSH sent letter of inquiry. Contacted Department of Hawaiian Homes Information and Community Relations and asked them to forward CSH Maui office phone number to Maui homestead community presidents.
Mr. Nainoa Thompson	Polynesian Voyaging Society	A		CSH sent letter of inquiry. Although Mr. Thompson could not be reached due to his Micronesia/Japan voyage, Kahu Maxwell had mentioned talking to him, see Table 4.

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Ms. Kili Namaau	Punana Leo O Maui	Y		CSH sent letter of inquiry.
Ms. Iris Mountcastle	Queen Lili'uokalani Children's Center	D		CSH sent letter of inquiry. Ms. Mountcastle explained that her organization's mission deals directly with child welfare issues and concerns, giving preference to Native Hawaiian orphans and destitute children.
Kahu Po'o Iki Clarence Solomon	Royal Order of Kamehameha	A		CSH sent letter of inquiry. Mr. Solomon gave testimony at a public meeting.
Ali'i Sir William Garcia Jr. CK	Royal Order of Kamehameha Office of the Ku'auhau Nui	Y	N	CSH sent letter of inquiry. Mr. Garcia referred CSH to Kaponoai Molitau.
Mr. Leslie Kuloloio	Hawaiian Cultural Practitioner	Y	Y	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Mr. Stanley H. Ki'ope Raymond	Hawaiian Language Professor, Maui Community College	Y	Y	CSH sent letter of inquiry. Informal interview, see Section 6.1.
Mr. Sam Ka'ai	Hawaiian Cultural Practitioner			CSH sent letter of inquiry. Informal interview, see Section 6.1.
Pastor Wayne Carroll	Pastor, Kahana Door of Faith/Hawaiian Cultural Practitioner	Y		CSH sent letter of inquiry.
Mr. Ke'eamoku Kapu	Hawaiian Cultural Practitioner	A		CSH sent letter of inquiry.
Mr. Ka'i'ini (Kimo) Kaloi	US Department of the Interior Office of Hawaiian Relations	Y	S	CSH sent letter of inquiry.
Mr. Perry O. Artates	Hawaiian Homes Waiohuli	A		

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Uwekoolani Family	Kama'āina	Y	N	CHS personnel called all 8 members listed in phonebook. Only contacted Rodney K. who said he did not know anything.
Cecilia K. Hapakuka	Kama'āina	U		
Kali Hapakuka	Kama'āina	Y	N	Ms. Hapakuka said she was raised at 'Ulupalakua and now resides in Kula at the Waiohuli homestead. She said she didn't know anything about Haleakalā but referred CSH to Michael Purdy and Merton Kekiwi.
Michael Purdy	Kama'āina	Y	N	
Merton Kekiwi	Kama'āina	Y	N	
AK Kahula	Kama'āina	N		
Clyde Kahula	Kama'āina	Y	N	Mr. Kahula explained that his family is not from area in study.
Lisa Marie Kahula	Kama'āina	U		
Jacob Mau	Kama'āina	U		
Ms. Gordine Bailey	Kama'āina	Y	N	Mentioned petitions opposing ATST. Referred her son Tim Bailey.
Mr. Tim Bailey	Kama'āina	Y	Y	Testimony given at meetings. Informal interview, see Section 6.1.
Mrs. Kathleen Bailey	Haleakalā National Park Wildlife Biologist	Y	Y	General information on 'ua 'u burrows.
Mr. Walter Kanamu	Living Indigenous Forest Ecosystem (LIFE)	N	Y	Testimony given at meetings.
Mr. Kawika Davidson	Kahikinui Game and Land Management, Kama'aina	Y	Y	Informal interview, see Section 6.1.

Name	Affiliation	Contacted ²	Personal Knowledge	Comments
Mr. George Kaimiola	Kama'āina	N		
Mr. Kaponoai Molitau	Cultural Advisor for the Kaho'olawe Island Reserve Commission	A		
Mr. Ethan Romanchak	Kama'āina	Y	S	Mr. Romanchak recalls the sandalwood trade, and describes that <i>'ōhelo</i> berries and <i>akala</i> berries were used for food. He notes that there are several dye plants found in the upper forest but cannot recall their names. He said the he knows people who collect <i>'a'ali'i</i> and other plants for <i>haku leis</i> and wreaths.

Interviews and consultations were conducted by Colleen Dagan, B.S. from February through the first week in April. Presented below are summaries and excerpts from informal telephone interviews and e-mailed responses by different community members. The summaries focus on the information in the interviews related to land uses and traditional cultural resources, practices and beliefs related to Haleakalā, Pu'u Kolehale, Pu'u Ula and the surrounding uplands.

6.1 Summaries of Informal Interviews

6.1.1 Ms. Wallethe Pelegrino

Ms. Pelegrino stated that she would share the CSH contact letter with a group of colleagues. Ms. Pelegrino said that she has visited Haleakalā throughout her life to watch the sunrise. She continues to visit Haleakalā once a year to watch the sunrise. As a teenager at St. Anthony's she visited the crater with her school and experienced the Brocken phenomenon. The Spectre of the Brocken, as it is known, is a natural phenomenon that can be witnessed in the late afternoon at the summit of Haleakalā Crater. With the sun at your back and facing the crater, a huge shadow of yourself is cast in the clouds and encircled by a rainbow.

6.1.2 Mr. Leslie Kuloloio

Born and raised on Maui, Mr. Kuloloio has ancestral ties to Honua'ula Moku and sits as a member on the Maui/Lāna'i Islands Burial Council. Mr. Kuloloio spoke of the importance of Haleakalā as a sacred place that brings forth life and ties together the features of the landscape of Honua'ula and the birth of the lands below. With regard to East Maui in its entirety, Mr. Kuloloio makes specific mention of Pohaku Palaha, the point at which all of the *moku* of East Maui begins. Mr. Kuloloio also mentions the significance of Haleakalā as a burial ground. While

not disclosing the exact location of burials within the crater and along the summit, Mr. Kuloloio notes that they are there and has concerns about the protection of these gravesites.

6.1.3 Mr. Hinano Rodrigues

Mr. Rodrigues explained that it may not be the presence of archaeological sites atop Haleakalā that indicates its cultural importance, but rather the lack thereof: "...sometimes the absence of any tangible cultural and archaeological feature is a manifestation of the importance and sacredness of the area. Haleakalā is one of those areas." Mr. Rodrigues describes Haleakalā as a *wao akua*, a place of the gods. This is why you find only a limited number of archaeological sites. The presence of any man-made structures takes away from the sacredness of the *wao akua*. "To many *Kanaka Maoli*, the very unobstructed view of the *mauna* itself is a part of their daily religious observations." Mr. Rodrigues feels that another structure atop Haleakalā will take away from the sacredness of this mountain.

6.1.4 Mr. Brian Jenkins

Mr. Jenkins relates that he was born and raised on Maui and explains that his family has lived on Maui for three generations. He has spent his lifetime hiking and hunting on the slopes of Haleakalā. He states that hunting is the general trend in the area. Mr. Jenkins explains, "These traditions are hunting and hiking and just finding a quiet, pure, pristine place in the wilderness to be alone with one's thoughts." He states that one of the favorite hunting areas is the Kahikinui Forest Reserve because of its "pristine wilderness character". He feels that ATST with its proposed 14-story height will have a "tremendous negative impact on that sense of wilderness that is currently enjoyed. This negative visual impact will also affect much on the Skyline Trail and views from the Upper Waiohuli Trail in the Kula Forest Reserve." Mr. Jenkins is equally concerned with the present restrictions on roadway access to the Skyline Trail. He wonders if future development at the summit may potentially block access to the Skyline Trail. He goes on to explain that the Skyline Trail is one of the favorite hiking trails of local people and has been used for hunting access for decades. He describes how it is used by hunters and explains that if some of the older hunters were forced to hike in from the lower gate that they would essentially be barred from hunting this area because the terrain from the lower gate access is too dangerous for them. Mr. Jenkins says that chuckers, francolin, pheasant, goats and pigs are all hunted in this area and used for food. In addition, pheasant feathers are prized for their use as hat bands, a paniolo tradition.

6.1.5 Ms. Roselle Bailey

Ms. Bailey is a *kumu hula* and admits the proposed ATST has been on her mind. She explains that she is not necessarily for or against it. She goes on to explain, our Hawaiian ancestors had extensive knowledge of the sun and stars. Ms. Bailey expressed her frustration with what she referred to as "foreign law" and how it requires the section 106 process and cultural impact assessments. She explains that these requirements essentially ask Hawaiian people to prove their cultural beliefs, in this case, why Haleakalā is considered sacred. Ms. Bailey does not feel that it is right for anybody, especially the host culture, to have to prove their beliefs in order to maintain the integrity of a site they consider sacred.

She does not feel qualified to speak about Haleakalā because she is from Lahaina. She suggested speaking to families from the area and shared some of those families' names:

Uwekoolani, Hapakuka, Santos and Kahula. She is concerned about the development of the summit and asks “when does it stop?” She is concerned about ATST being used by the military and putting Maui and the entire state in danger. Ms. Bailey describes feelings of mistrust of the government. Ms. Bailey made mention of a significant rock located at the summit of Haleakalā and described this rock as a marker set at the point where all the east Maui ahupua‘a meet. Ms. Bailey also explained that Haleakalā Crater was traditionally used as a calendar and that Hawaiians tracked the path of the sun by observing the shadows on the crater floor. Times of special significance at the summit were during the solstices and equinoxes and she stated that on the solstice the sun’s rays hit Pu‘ukukui directly. Ms. Bailey states that the proposed ATST must interfere with this use of Haleakalā crater as a calendar.

Ms. Bailey makes reference to a Hawaiian proverb about Pele:

‘A‘ohe o kāhi nānā o luna o ka pali;
iho mai a lalo nei;
‘ike i ke au nui ke au iki, he alo a he alo.

The top of the cliff isn’t the place to look at us;
come down here and learn of the big and little current,
face to face” (Pukui 1983: 24).

This is meant to be an invitation to discuss something or learn the details of a matter. “Pele said this to Pā‘oa when he came to seek the lava-encased remains of his friend Lohi‘au” (Pukui 1983: 24). Ms. Bailey says this of the scientists on Haleakalā and those who propose ATST, she would like to see them come down and talk to the people, particularly elementary school students, “come down off the high mountain and teach the young people at their level”.

6.1.6 Mr. Charlie Lindsey

Mr. Charlie Lindsey considers Haleakalā sacred and does not want another observatory built there. Mr. Lindsey feels that there is too much up there now and if anything else is built, then something else should come down.

6.1.7 Dr. Alan Kaufman

Dr. Kaufman explained that he goes to Haleakalā for recreation and stated that he has taken his older children on overnight camping trips in the crater. He said that he takes visiting guests to the crater one to two times a year. Dr. Kaufman's youngest son is part-Hawaiian and they have visited the *ahu* at the summit. Dr. Kaufman explains that he wants his son to have memories and experiences that “give him a sense of place and belonging.” Dr. Kaufman also explained that he had passed our Community Contact Letter out at the last community meeting and no other members had any comments to share on the subject.

6.1.8 Mr. Stanly H. Ki‘ope Raymond

In addition to Mr. Raymond's public comments and letters on behalf of Maui Community College's Hawaiian Studies Program, Mr. Raymond shared that he has visited the summit of Haleakalā annually since he was a child. Growing up in Lahaina, Mr. Raymond explained that it was quite a journey to the summit. As an adult Mr. Raymond goes there for spiritual purposes, to

pay respects to ancestors and the different Hawaiian deities. He uses the two *Ahu*. He also describes the significance of Paeloko, a coconut grove located at Waihe'e in which the sennit from this particular coconut grove was used to make the lasso or cordage that Maui used to snare the sun.

In an e-mailed letter, Mr. Rayomond suggests having an English translation of the welcome sign (currently only in the Hawaiian language) at the entrance to Science City. He explains that the majority of Hawaiians cannot read Hawaiian and therefore may not know they are allowed in this area. He says signs in both English and Hawaiian would allow the public to understand who can enter and for what purpose.

6.1.9 Mr. Sam Ka'ai

Mr. Ka'ai explained that Haleakalā is a sacred mountain and that "sacred mountains are praying places." He explains that it is hard to pray when you have helicopters flying overhead, thousands of cars and tourists, and large telescopes all around your praying place. He describes the great pain that the Hawaiian people experience when a sacred place such as 'Īao or Haleakalā are desecrated as these have been. He relays his frustration with the laws requiring cultural impact assessments and the section 106 process. He explains, people take their time and share their knowledge only to find that it doesn't make a difference in the outcome of a project. Mr. Ka'ai explained that these people increasingly feel they are wasting their time, because, he stresses, "no one listens!" Mr. Ka'ai spoke of the rock at Haleakalā that marks the point where the eight Moku of east Maui meet and speaks of its importance in Hawaiian culture. He also mentions Pa'a Kea, a rock or rock mound where priests would go on the summer solstice to pray. He talks of Pu'u Ula, explaining that it is also called Red Hill or Sacred Hill. Mr. Ka'ai states the summit area of Haleakalā is where angels walk and was *kapu* to commoners. Lastly Mr. Ka'ai mentions that his family used to own land from Palikū, down the mountain.

6.1.10 Mr. Kawika Davidson

Mr. Davidson is the president of Kahikinui Game and Land Management. This group has rights to access the Kahikinui Forest Reserve for the purpose of hunting and gathering plants from the area. Mr. Davidson relays his knowledge of Haleakalā as *wao akua*, "a fragile part of the upper forest to the summit." He explains that in traditional times this area was *kapu* to all except *ali'i*, *kahuna* and messengers. Mr. Davidson describes using the Skyline Trail for access to hunting grounds. He hunts goats, pigs, deer, pheasant, chucker and other variety of game birds. He also says that he uses this area to collect 'ōhelo berries, ferns, *pūkeawe*, *pōpolo*, *māmane* and 'a'ali'i. Mr. Davidson uses the plants for a variety of purposes and hunts for food. He recalls, that traditionally only certain parts of the forest could be accessed by man. Mr. Davidson feels the proposed ATST will be an eyesore.

6.1.11 Mr. Timothy Bailey

Mr. Bailey is a Haleakalā National Park (HNP) employee of 16 years. He currently heads the Feral Animal Removal Program. In his time employed at HNP, Mr. Bailey has had the opportunity to hike the entire crater rim, traverse the carter, and has accessed the surrounding slopes of Haleakalā. Over the years he has become intimately familiar with the greater Haleakalā region. He shared some of his cultural knowledge of the area with CSH staff.

Mr. Bailey began by describing the Pohaku Palaha, a flat, circular plateau that marks the “*piko*” of east Maui. This is the spot where all eight east Maui *moku* meet. It is located at the top of the northeastern rim of the crater, at Lau‘ulu Paliku. Its name is said to represent the *he‘e*, or octopus, and describes how the *he‘e* clings on to a rock when hiding or when being hunted. Its eight tentacles spread out over the rock and its mouth, its center, representing the *piko*, locks onto the rock making it extremely difficult to pry loose. Like the tentacles of the *he‘e* spread out over a rock, Pōhaku Pālaha is the *piko* from which the eight east Maui *moku* fan out.

Mr. Bailey went on to describe the migration pattern of the ‘*ua‘u*. He explained that Hawaiians observed animals’ migration patterns and used them in combination with other natural cycles to keep track of seasons and time. It was known that when the *koholā* or humpback whale, left Hawaiian waters, the ‘*ua‘u* would be arriving to nest and when the ‘*ua‘u* left, the *koholā* would be returning. Therefore, Hawaiians knew not to waste their time hunting for ‘*ua‘u* while the *koholā* were still around. Mr. Bailey explained that a mother ‘*ua‘u* is referred to as *kaini* and traditional hunters were careful not to kill as they were needed to raise their young. Although ‘*ua‘u* chicks and males were hunted for food, traditional hunting practices made sure populations continued to thrive.

Mr. Bailey explains that ‘*ua‘u* were hunted for food and for feathers. They were eaten exclusively by the *ali‘i*, and their feathers were used as adornments for *hula* and *lua* instruments as well as feather capes. ‘*Ua‘u* and ‘*ua‘u* feathers were the *hō‘ailona*, or the insignia of some *ali‘i*. And in the same way feather cape patterns identified the rank of an *ali‘i*, the particular color of the feathers also indicated the rank of an *ali‘i*. ‘*Ua‘u* were also the ‘*aumakua*, or family god, of some families. Birds were caught using snares and basket traps. In a third technique, a stick was used by inserting it into the burrow and placing it into the birds’ downy feathers. One would then twirl the stick and the feathers or *huluhulu* would become entangled around the stick and the bird could then be pulled out. Mr. Bailey referred to this as “*wiliwili* the *huluhulu*”. Mr. Bailey noted the many sling stones he has observed in the crater. He thinks they might have been used for hunting ‘*ua‘u*. Their name, he believes, is simply the sound of their call, ‘*ua‘u*.

Mr. Bailey continued to describe some ‘*alaea* (“red ochreous earth”; Pukui and Elbert 1986:17) pictographs located near Kapalaoa Notch. He has studied these pictographs and thinks they look like ‘*ua‘u* birds. He also described a variation of the place name Kapalaoa. He said he has known the area as Ka palaoa, two words meaning the *palaoa*, likened to the prized whale ivory pendant, *lei palaoa*. Ka palaoa Notch, he explained, is a notch in the cliffs of that area shaped like a palaoa pendant. Mr. Bailey also described a spring that feeds the Kapalaoa cabin called Wai palaoa and a *heiau* located atop Kapalaoa ridge.

During his time with the park service, Mr. Bailey has noticed what he believes are old Hawaiian trails. Trails, he states, that are well made and have managed to withstand the ages. Mr. Bailey believes that one trail in particular follows the flight path of the ‘*ua‘u* from the old fishing village at Nu‘u, to their nesting ground at Haupa‘akea, on the southern rim of the crater. He has followed sections of the trail on foot and from a helicopter. He has hiked from Haupa‘akea to Nu‘u in a day’s time proving that Hawaiians could get to Haleakalā Crater and summit area fairly quickly. Mrs. Kathleen Bailey, Mr. Bailey’s wife, is a wildlife biologist at Haleakalā National Park. She noted that there are 27 active ‘*ua‘u* burrows at the preferred Mees site location.

6.2 Kahikinui Homestead Community Meeting

On March 17, 2007 CSH staff members Colleen Dagan and Tanya Lee-Greig attended the Kahikinui Community Board meeting. Individuals in attendance included community president Mr. Norman Abihai, Mr. Quintin Kiili, Mr. Earl Mo Moler, Mr. Aimoku Pali and his wife Mrs. Lehua Pali, Ms. C. Mikahala Kermabon, Mr. George Namauu and his wife Mrs. Gerturde Uwekoolani Namauu. (Individuals not in attendance but who were contacted by phone include Ms. Chad Newman and Ms. Donna Sterling. Individual testimonies are detailed below.)

The community expressed their concerns and opposition. There was the overall feeling that there was nothing they could do to stop ATST from being built, it being a “done deal”. As a community they felt they were not properly informed as the only information they had received about the proposed ATST was from another community member, Ms. Chad Newman. Ms. Newman had given community members some information on ATST back in 2005. As a community they would have liked the National Science Foundation to come out to Kahikinui and discuss ATST with them. They would have liked the NSF to be available to answer questions. Ms. Dagan and Ms. Lee-Greig referred community members to NSF's ATST website.

Community members felt the NSF should have asked for permission for use of the site before any other planning was completed. Feelings towards the land ran deep and Mrs. Pali explained that it's not right to disrupt the *aina*. She stated, “hurts the heart” to see the various development projects happening on Maui.

Community members were concerned about hazardous waste. They wanted to know what the potential for hazardous waste spills would be and how these accidents might affect their community. The community was concerned about impacts to the Kahikinui Forest Reserve, and to plants, animals and the environment overall. There were concerns about radiation. They asked if ATST would emit any harmful “rays”.

Although as individuals they oppose the ATST at Haleakalā, they were able to come together and make a few suggestions about what they would like from the NSF in return for the Haleakalā site. The community would like to see educational programs, scholarships, and mentorships given to Native Hawaiian children and adults. They explained that the general public should also benefit in the same ways. There were suggestions made about employing local residents in professional positions, and training those residents in professional fields by way of mentorships and apprenticeships. They would encourage the NSF not only to accept the smartest students or adults, but also train the average or even at-risk individuals. They would like to see preference for participation in these programs given to residents of Kahikinui. They would also like to see support given for infrastructure and utilities (installation of water lines, electricity and roads) for Kahikinui homestead lands.

6.2.1 Mr. Norman Abihai

Mr. Abihai expressed deep frustration with the proposed ATST site. He added, the area in study is ceded lands, and he does not want it built.

6.2.2 Ms. C. Mikahala Kermabon

Ms. Kermabon is concerned about the impacts ATST might have on trails and archaeological sites in the Kahikinui Forest Reserve and on Kahikinui homestead lands. She describes the

strong winds in the area and expresses concern about hazardous material spills and the rate an airborne pollutant might spread.

6.2.3 Mr. Quintin Kiili

Mr. Quintin would like to see an ATST rendering from Kahikinui showing homes in the area and their relation to the summit and ATST.

6.2.4 Mr. Aimoku Pali and Mrs. Lehua Pali

Mr. and Mrs. Pali believe Haleakalā is sacred. Mrs. Pali reminds us that Haleakalā was left pure by traditional people. They would like NSF to invest whatever it takes to change the color of the telescope so that it would not be as visible. They suggest NSF building their own power plant to cool ATST. They strongly encourage NSF to develop programs that provide mentorships for *keiki* and apprenticeships for adults so the local people can hold professional jobs with the NSF on Maui.

6.2.5 Mr. Earl Mo Moler

Mr. Moler feels his community will have little or no effect on stopping ATST from being built. He would like to see ATST moved away from the edge of the Pu'u. Mr. Moler advocates protecting sacred Hawaiian lands, so these lands can continue to be used as spiritual places. He would like to see the natural resources of Haleakalā protected as Kahikinui residents and Hawaiians remain a gathering people. He stresses, "Stop the raping of our natural and sacred areas!"

6.2.6 Ms. Donna Sterling

Ms. Sterling referred CSH staff to Walter Kanamu and Art Medeiros of Living Indigenous Forest Ecosystem (LIFE), Kawika Davidson of Kahikinui Game and Land Management, JoAnn Kahanamoku Sterling, and Gordine Bailey. Ms. Sterling described a rock located at Haleakalā that serves as a marker of the point where the eight east Maui *moku* meet. She says that this point has cultural significance. She also recalls going to the summit with Kahu Maxwell years ago to chant "e ala e". Ms. Sterling's husband, Leon Sterling recalls the 'Ua'u and notes they are territorial. Ms. Sterling raised a concern about nighttime light shed from the proposed ATST. She explains that the Kahikinui area is dark, there are no lights at night and this darkness supports certain animals with nighttime habits.

6.2.7 Ms. Chad Newman

Because Ms. Newman is from Molokai she does not know about cultural practices or cultural resources at Haleakalā. Ms. Newman expresses some excitement about ATST. She feels that the potential benefits of ATST to mankind on a global scale are extremely important. She feels it is crucial to learn about the future of our environment. She explains, if ATST will be able to help us understand things like global warming and sea level changes and help us learn what we can do to prepare for climate changes, than it seems it would be an essential tool to have. As a Native Hawaiian with two young daughters, Ms. Newman is also excited about the possibilities of educational programs developed as a result of ATST.

6.3 Maui Community College (MCC)-Hawaiian Studies Program

The Hawaiian Studies Department at MCC responded to CSH's letter of inquiry and included four individual students' feelings regarding the proposed ATST. The Hawaiian Studies Program e-mailed their response stating they oppose the proposed ATST, "...it would be a desecration of Haleakalā on Maui one of the most sacred and spiritual places of Hawai'i. The approximately 14 story tall ATST structure would have a negative impact through the disturbance, alteration and removal of sacred natural resources ...soil, rocks, and possible cultural artifacts. Significant cumulative consequences of the proposed development would be the adverse and devastating visual effect caused by the addition of this intrusive and culturally inappropriate structure."

6.3.1 Kama'āina, Student

This individual explains he or she was born and raised on Maui, and has ancestral roots in Kahakuloa. The individual hopes to attain a degree in environmental conservation and opposes ATST. Opposition is based on the perceived negative impacts ATST would have on cultural practices, the environment, and the 'Ua'u. The individual explains that Haleakalā has great spiritual value to Hawaiians and concludes by stating, "...I am not against good science, but I don't think good science should threaten a species and offend the host culture."

6.3.2 Ms. Cheynne Sylva

Ms. Sylva explains that "Hawaiian people have suffered more than it seems like you folks know. If you understood the Hawaiian people and our history, you would know that asking to build a four-teen story building on...our sacred mountain, is extremely insulting." Ms. Sylva explains that Haleakalā caters to tourists every day and declares: "[o]ur mountain is not an amusement park..." Ms. Sylva says Haleakalā is a sacred place and she does not want ATST built there.

6.3.3 Mr. Walter Kozik

Mr. Kozik begins his testimony by stating, "How many more times do the indigenous peoples of the world have to face the hungry eye of Science and watch, powerless, as it's great mouth devours those places and beliefs that make up the identity of the people themselves?" Mr. Kozik speaks of a type of western scientific manifest destiny, where all things on earth will soon be conquered by western science and western man. Point being, that science does not have all the answers, and in fact indigenous knowledge is equally valuable.

6.3.4 Ms. Kathleen Zwick

Ms. Zwick, who states she is not Native Hawaiian, feels that ATST will have a considerable negative impact on Hawaiians. She feels ATST will negatively impact the islands endangered species. Ms. Zwick understands that Haleakalā is the only location proposed where the host culture attaches sacred beliefs to it. Ms. Zwick does not think it is appropriate to build ATST against the protests of the Hawaiian people.

Section 7 Traditional Cultural Practices

In this section, cultural practices, traditional and modern day, have been extracted from the public testimonies, formal letters, and from the community consultation process. The practices and beliefs presented here are derived from common themes that presented themselves throughout the above processes (Section 5 Scoping Meetings and Section 106 Testimony; Section 6 Community Contacts and Consultations) as well as additional background research. Excerpts from McGuire and Hammatt (2000), Maxwell (2002, 2003, 2006), Xamanek Researches, LLC (2006), KC Environmental (2005) have also been included in these summaries.

7.1 Gathering for Plant Resources

Plants along the upper elevations and summit of Haleakalā include *‘ōhelo* berries, *lehua*, *‘a‘ali‘i*, *pūkeawe*, *pōpolo*, *māmane* and various species of fern. *‘Ōhelo* berries (*Vaccinium sp.*) were traditionally offered to Pele (see Section 3.1.2.4 A Description of the Powers of Pele by William Ellis (1826).) by those who frequented the upper elevations of the mountainous regions. Currently, as in traditional times, upland hikers and those in transit would often pick these berries as a food resource when found ripe (Abbott 1992:44).

Pūkiawe (*Syphelia tameiameiae*) (Abbott 1992:126) and *lehua* blossoms were often used for lei making. Kumu Hula Hokulani Holt-Padilla (McGuire 2000: 60) describes collecting *pūkeawe*, *lehua*, *māmane* as well as other plants and flowers.

The trunks and branches of the *‘a‘ali‘i* (*Dodonaea viscosa*) and *māmane* (*Sophora chrysophylla*) were traditionally harvested and used for *hale*, or house, posts (Abbott 1992: 68). Present day efforts have revived the construction of traditional structures, however, it is unknown at this time whether these plants are actively harvested along the upper elevations for modern *hale* construction. Traditional use of *māmane* for weaponry, particularly spears, was also common during the time period before western contact (Abbott 1992:110). While there are modern craftsmen of traditional weapons practicing their art, it is unknown if timber from the *māmane* tree are being actively harvested for this specific purpose along the upper elevations of Haleakalā.

Pōpolo (*Solanum americanum*) leaves were often used in *la‘au lapa‘au*, or Hawaiian medicinal practices, for alleviating sore tendons, muscles, and joints (Abbott 1992:98). There are indications that this plant continues to be gathered along the upper elevations.

Although no gathering of plant resources occurs in the proposed ATST locations, the community consultation process revealed that traditional gathering for plant resources continues today in the upper elevations surrounding Haleakalā summit. Mr. Kawika Davidson recalls that traditionally only certain parts of the upper forest could be accessed. In the past as well as at present, *kumu hula* and *hula* students go to the upper forested areas to collect flowers and plants for *lei* and adornments. There are cultural concerns about the possibility of the contamination of the plant resources via hazardous materials that may potentially result from the operations of ATST.

7.2 Traditional Hawaiian Sites

In the most recent archaeological study, Xamanek Researches, LLC (2006) completed a field inspection of the proposed primary location and the alternate location for ATST. Six newly identified sites which include a total of 30 individual features were recorded. There are a total of 12 archaeological sites that have been assigned SIHP numbers in the OH parcel, with a total of 51 traditional Hawaiian features. Archaeological sites include: temporary habitation sites, petroglyphs, terraces, rock walls, a potential burial, undetermined rock piles, and a foot path.

Different archaeological sites, including an adze quarry, were also mentioned in the testimonies and community consultations. Mr. Tim Bailey also makes mention of a *heiau* above Kapalaoa. It is clear that the 18 acre parcel in study was an important place for Hawaiian living in precontact times. The large number of remnant archaeological sites indicates that the area was used and therefore held significance during traditional times.

7.3 Traditional Hawaiian Birth and Burial Practices

The crater floor, as well as the summit area, is known to be a place where people went not only to bury their dead but also to place the umbilical cords of their infants. During his survey of the crater floor, Kenneth Emory noted a pit where the umbilical cords or *piko* were found in sealed jars and there are indications that the practice continues to the present time. With regards to burial practices, there was mention of burial sites/caves in the crater throughout the public comment period, as well as a possible burial feature within the 18.166-acre HO (E. Fredericksen and D. Fredericksen 2003). Through these actions it is clear that Haleakalā plays a vital role in the life cycle of Native Hawaiian people who were and continue to be *ma'a* (familiar or accustomed) to this place.

7.4 Native Hawaiian and Contemporary Hunting Practices

The Hawaiian Dark-rumped Petrel (*Petrodroma phaeopygia sandwichensis*) known as the 'Ua'u, is an endangered species whose breeding grounds are found only in the main Hawaiian Islands (Day *et al.* 2005: i). On Maui their nesting sites are located at the summit of Haleakalā and throughout the crater. The highest known concentration of burrows is located at the inner western rim of the crater. There are approximately 27 known active burrows surrounding the proposed Mees site location (Kathleen Bailey, per telephone conversation April 1, 2007).

The Hawaiian Almanac of 1902 published by Thomas Thrum, the 1902 included a description by ornithologist H.W. Henshaw of the 'ua'u:

The natives inform me that the 'ua'u is common on the fishing grounds, some five to ten miles off the windward side of Hawaii. The natives reported that the birds formerly nested in great numbers in the lava between Mauna Kea and Mauna Loa.

It is said that years ago the nestlings of the 'ua'u were considered a great delicacy, and were tabooed for the exclusive use of the chiefs. Natives were dispatched each season to gather the young birds which they did by inserting into the burrows a long stick and twisting it into the down of the young which then were easily pulled to the surface (Henshaw 1902:120, *italics added*).

Mr. Tim Bailey stated that he too knows of this use of the 'ua'u. He explained that a mother 'ua'u is known as a *kaini* and Hawaiian bird hunters were careful to avoid killing the *kaini* as

they were needed to raise their young. In addition to being a prized food source, 'ua'u were also hunted for their feathers. The 'ua'u were the *hō'ailona*, or the insignia, of some *ali'i*, and thus, used by them in personal adornments such as capes. Certain *ali'i* might be identified, not only by the pattern in his or her feather cape, but also by the type of feathers and the distinct color of the feathers. 'Ua'u feathers were also used as adornments on *hula* and *lua* instruments. Because of the birds' migratory nature, following the seasons, 'ua'u feathers might have been used to represent the season in which they appear. Lastly, 'Ua'u were considered 'aumakua, a family or personal god (Pukui and Elbert 1986), who acted as a guardian. Today, it is illegal to harm or kill the 'ua'u as they are an endangered species and are protected by State and Federal laws.

Concern for the 'ua'u was raised throughout the testimonies. Mr. Ki'ope Raymond stressed that the 'Ua'u is an 'aumakua or family god and an endangered species. There is concern is that these endangered birds may be displaced, harmed or killed during construction as their burrows are near the proposed site. Mr. Leslie Kuloloio says of the 'Ua'u, "[t]hat represents old Hawai'i" (Table 3). Mr. Tim Bailey voices his concern about the 'Ua'u and the Native bat, 'ōpe'ape'a (Table 3).

Hunting practices are ongoing in the upland areas that border the National Park. The hunting of deer, goats, pigs, pheasant, chukar partridges, francolin and other game birds has become a culturally supported subsistence practice. In addition to subsistence hunting, feathers from some game birds are highly prized for their use in hatbands.

It was found that the Skyline Trail has been used by generations of hunters for access to the upper reaches of the Kula Forest Reserve. Another favorite hunting area is the Kahikinui Forest Reserve. This forest reserve is located along the southern park boundary and is managed by Living Indigenous Forest Ecosystem, (LIFE), a non-profit organization which works to keep feral animals and invasive species out of the reserve in an effort to help support the native forest. LIFE works in cooperation with Kahikinui Game and Land Management, a group allowed into the reserve to hunt feral animals.

7.5 Wahi Pana (Storied Place)

Historical research, public testimonies and community consultations confirm that Haleakalā is a well known *wahi pana*. Its legendary status is not only known in Hawai'i but throughout Polynesia. It is at Haleakalā that one of the greatest deeds performed by the demi-god Māui occurred, and although there are several variations of the legend of Māui snaring the sun, most Polynesians are familiar with the tale. Traditional accounts of Māui's deeds are found in the Richard Taylor compilation and it is in these collections that are found the closest ties with the Maori people of Aotearoa (see Section 3.1.1.2 Stories Collected by Taylor (1870)).

Evidence of Māui's importance resurfaces in several testimonies. Ms. Uilani Kapu explains that people come from Aotearoa to visit Haleakalā for spiritual purposes (Table 11). Mr. Edwin Lindsey describes the Maori people of Aotearoa and their belief that Māui pulled their home, Aotearoa, up from the sea. He explains, "It [Haleakalā/Māui] is a spiritual entity that crisscrosses and has deep spiritual meaning to cultures not only here...but throughout Polynesia" (Table 3). Mr. Tom Cannon briefly relates the legend of Māui snaring the sun to slow it in its path across the sky, so his mother would have more time to dry her *kapa* (Table 11). Ms. Leslie Ann Bruce states, "...as we all know, [Haleakalā] has mythological significance of the highest value. It is a storied place for the island's namesake, Māui, who has Pan Pacific importance to many

Polynesian cultures in addition to Hawaiian culture” (Table 10). Regarding Haleakalā’s interconnectedness with different places on Maui Island, Mr. Kiope Raymond notes the significance of Paeloko, a coconut grove located at Waihe’e, that provided the coconut fibers or sennit Māui used to make the lasso or cordage that snared the sun (Section 7). In his interview with Ms. Ka’ohulani McGuire, Mr. Kapi’ioho Lyons Naone mentions hearing people talk about Ka’uiki, the birthplace of Maui (2000: 85).

While all volcanic craters were once the dwelling place of the fire goddess Pele, Haleakalā is also the site of an epic battle between Pele and her eldest sister Namakaokaha’i (see Section 3.1.2 Legends of the Goddess Pele as Related to Haleakalā). It is along the slopes and within the crater of Haleakalā where Pele lost the physical battle to Namakaokaha’i and where the bones of her physical form are scattered far and wide. It is in the aftermath of this battle that Pele takes her spiritual form and finds her final home within Kilauea on the island of Hawai’i.

7.6 Haleakalā as a Sacred Mountain

According to historical research, testimonies, formal letters and community consultations, Haleakalā is considered to be a sacred place. The overall feeling is that the construction of the proposed ATST atop Haleakalā is viewed as the desecration of a sacred mountain that will have a negative impact on Hawaiian culture and on the scenic properties of Haleakalā. This theme was repeated throughout the meetings in formal letters and in the community consultation process. Individuals stated that they go the summit area for spiritual and ceremonial purposes, to pray, and to find solitude and solace and to remain in contact with the gods and ancestors. Mr. Bill Evanson explains: “... [I]ots of people appreciate open space, as our island becomes more developed, those are the places we go to seek refuge and get spiritual replenishment” (Table 11). In his testimony Mr. Michael Howden explains that Pu’u Kolekole is a sacred, “place of prayer and inner attunement...” “It’s a place sacred for ceremony” (Table 10). Mr. Ki’ope Raymond states: “I am a Native Hawaiian who does attach religious and cultural significance to Haleakalā I will be negatively affected and offended by the proposed undertaking of the Advanced Technology Solar Telescope” (Table 6. Mayor Hannibal Tavares Community Center - March 28, 2006). Mr. Edwin Lindsey describes his feelings on the sacredness of Haleakalā, “[w]hen a culture depends on these natural wonders of their environment for survival and reverence communications to a power higher than themselves, all care must be given to this practice. Haleakalā is noted throughout Polynesia as one of a most sacred area. There are stories, legends, events, but most important, prayers by generations of *Kahunas*. As many visitors can testify there is a life force within these rocks that have influenced their lives” (Table 12). Mr. Sam Ka’ai makes the statement: “sacred mountains are praying places.” He goes on to explain that it is hard to pray when you have helicopters flying overhead, thousands of cars and tourists, and large telescopes all around your praying place (Section 7). Individuals contacted during the community contact process overwhelming share this view.

The summit area is referred to as *wao akua*. This has been described in the testimonies and community consultations to mean, the realm of the gods, where the gods dwell, and a place for the gods. One example as stated by Mr. Lui Hokoana (in Table 7. Paūkukalo Community Center - May 1, 2006): “I was taught to revere the mountain because it is a place where the gods dwell.” Pukui and Elbert define *wao akua* as, “[a] distant mountain region, believed inhabited only by spirits (*akua*); wilderness, desert.” (1986; 382). It is an area that is described to have been *kapu* in traditional times, to all but *ali’i*, *kahuna* and their *haumana*. In an interview with Kahu

Maxwell (2006:24), Ms. Hokulani Holt-Padilla describes Haleakalā to be *wao akua*. She explains: "...and so as a Wao Akua, that is where the gods live and whenever we go as humans, we must go in a sense of humbleness and in a sense of asking and in a sense of not disturbing unduly..." She goes on: "[w]e will come and go the mountain will remain, it is greater than all of us." This idea is another sacred aspect of Haleakalā.

Testimonies describe the cinder and rock of Haleakalā as being the *kino lau* or the physical, body form of Pele. The excavation required for the proposed ATST is thought of as digging into Pele, into her *kino lau*. This is believed to be a desecration of Pele and, therefore, a desecration of one of the sacred aspects of the mountain.

In the most extreme testimonies the proposed construction of ATST and the existing structures at Pu'u Kolekole are described as the "rape" of Haleakalā. Mr. Edwin Lindsey states, "...in rape there's no concurrence (Table 7. Paūkukalo Community Center - May 1, 2006)." He goes on in a separate testimony, "I refuse to have Haleakalā prostituted for the sake of this project. You cannot take advantage of Haleakalā and throw ideas out to what is sacred" (Table 7. Paūkukalo Community Center - May 1, 2006). He feels there is nothing one can do to lessen or mitigate the impacts of this type of action. His intense feelings about Haleakalā are shared by Ms. Suzanne Burns who explains: "I feel like my mountain [is] a rape victim and we're asking the friends of the rapist to stop raping our mountain, and they're saying, 'Oh, by the way, do you mind if we rape it one more time?' That's what it feels like" (Table 11).

As is apparent, this topic is one that evokes strong emotions throughout the Hawaiian community. In another testimony, Ms. Leslie Ann Bruce describes how she feels, "[p]eople I know on the island, including myself, feel hurt, offended and invaded by outsiders' intrusions on our *wahi pana*, our sacred places, that lose their pristine character and cultural significance by being used for large, obtrusive structures that obliterate the emptiness we value so highly on our mountain top" (Table 10).

Testimonies reveal a deep sense of a protective nature over Haleakalā and the idea that it is the Hawaiian people's *kuleana* or responsibility to properly care for Haleakalā, not just for themselves but for future generations. This theme repeats itself throughout the meetings. Mr. Tom Cannon states: "I feel that there is no more culturally significant place in Maui County, in the U.S., or in Polynesia than the summit of Haleakalā" (Table 11). Ms. Mikahala Helm describes this by stating, "[s]ome of us strongly feel that it is our responsibility to have a legacy for our children and the children's children, all the generations to come. And we feel it so deeply, that it is not our role to come here and give you proposals on what we can do to mitigate. But it is our role to strengthen what it is we want to do to avoid it being built here at all" (Table 6. Mayor Hannibal Tavares Community Center - March 28, 2006).

7.7 Pōhaku Pālaha-The Piko of East Maui

Throughout the community consultation process this point, or rock, as it was commonly called, was mentioned several times. Although not all who mentioned this point knew its name, all recalled that it was a significant.

Mr. Timothy Bailey and Mr. Leslie Kulolio described it well when explaining the thought behind the name Pōhaku Pālaha. The name is said to represent the *he'e*, or octopus, particularly how the *he'e* clings on to a rock when hiding or when being hunted and how its eight tentacles spread out over the rock. Mr. Bailey further elaborates that the mouth, its center, representing the

piko, locks onto the rock making it extremely difficult to pry loose, “its pōhaku pālaha” or stuck flat to the rock, he explains. Like the tentacles of the *he‘e* spread out over a rock, Pōhaku Pālaha is the rock, the *piko*, from which the eight *moku* of east Maui fan out. In his cultural resource evaluation, Maxwell (2003:4) speaks also of the Kolekole area being the *piko* of Maui Nui a Kama (Maui, Moloka‘i, Lana‘i, and Kaho‘olawe). These two ideas may well be one in the same.

7.8 Cultural Practices

It is not unusual in the Hawaiian culture, and in other cultures, that individuals keep specific cultural rituals and ceremonies secret. This may be for personal reasons or a matter of having the responsibility of maintaining the integrity of a particular ceremony or ritual. As a result of this, testimonies do not reveal many specific cultural practices. Instead of actual descriptions of ceremonies the consensus derived from the testimonies is that Haleakalā is a sacred mountain and that people go there for spiritual reasons and for ceremonies. This must be accepted on that basis alone. Kahu Maxwell explains this as well; he states: “[i]n the past it was not proper to talk about the sacred practices that occurred on Haleakala...” (2002:23). Today, he says, more people are sharing their *mo‘olelo*. Even so, testimonies and community consultations show great caution is taken in sharing one’s knowledge. Of the few examples given in testimonies, a known ritual performed atop Haleakalā is the calling of the sun, in chanting, *E ala e*, as the sun rises. Melia explains that once a year and sometimes once a month her family goes to Haleakalā to “...greet our ancestors, our *kupuna* and also [greet] the sun...” She continues, “[w]e like to go up to that mountain and say *a ala ai [e ala e]*...” (Table 7. Paūkukalo Community Center - May 1, 2006). The following is the entire chant and its English translation from Maxwell (2006):

E ala e	Rise
Ka lā I kahikina	The sun at the east
I ka moana	At the ocean
Ka moana hōhonu	At the deep ocean
Pi‘i ka lewa	As it climbs
Ka lewa nu‘u	To the highest
I kahikina	In the east
A I ka lā	Is the sun
E ala e	Rise

In her formal interview with Ms. Ka‘ohulani McGuire (2000:53), Ms. Hokulani Holt-Padilla described visiting Haleakalā on a regular basis, often during the summer and also when it snowed. She explains that it used to snow more regularly on Haleakalā than it does now. Ms. Holt-Padilla remembers being required by her grandmother to have a moment of “respectful silence” while at the summit (McGuire 2000:54). Ms. Holt-Padilla also mentions the deity Lilinoe, the goddess of the heavy mists, who resided at Haleakalā (McGuire 2000:55). Ms. Holt-Padilla goes on to describe an *‘awa* ceremony she performs at an old ohia tree at the park. She explains that she goes to this tree to pay her respects and honor that tree (McGuire 2000: 60).

Ms. Roselle Bailey describes another traditional practice atop Haleakalā and its use as a calendar. She explained that Hawaiians tracked the path of the sun by observing the shadows on the crater floor. Both Ms. Bailey and Mr. Ka‘ai describe that the solstices and equinoxes were times of special significance at the summit. Ms. Bailey stated that on the solstice the suns rays hit

Pu'ukukui directly. Mr. Ka'ai explained that on the summer solstice priests or *kahuna* went to Pa'a Kea, described to be a rock or rock mound near the summit, to pray. Ms. Bailey states that the proposed ATST must not interfere with this use of Haleakalā Crater as a calendar. In addition, there are two *ahu* near the proposed project area at Pu'u Kolekole, one which faces west called Hinala'anui, and one which faces east called Pā'ele Kū Ai I Ka Moku. These *ahu* are described in (Maxwell 2006; 43-45).

Mr. Kapi'ioho Lyons Naone was also interviewed by Ms. McGuire (2000) and shared his knowledge about the Hawaiian significance of the solstices. He explained that growing up in Kipahulu he followed the traditional moon calendar and according to the moon calendar, the solstices were honored times of the year, they were referred to as *hālāwai*:

...the meeting or zenith, when the sun was directly overhead, when we have the greatest amount of *hā* (spiritual breath or strength that comes from above). And, it was always believed that every *heiau* had its 'anu'u (tower within the heiau) tower, of which there was the calabash bowl underneath and when the sun came directly overhead and there was no shadow, that was the most spiritual time of the *heiau*. And, that's also the most spiritual time of each mountain (McGuire 2000: 72).

Mr. Naone's grandmother explained to him that this time, the *hālāwai*, was a very sacred time (McGuire 2000: 72). Mr. Naone goes on to describe a *pu'u* known as Iwilele, or more commonly, Leleiwi. He describes this *pu'u* as being located near Science City and gives the following description of its significance to the *hālāwai*:

There is a place we call Iwilele. It's where the bones of the ancestors or the spirits of the ancestors fly. The two important places that I recognize are Leleiwi and Kianiaui, because of the *hālāwai* or the "meeting"—the zenith—when the sun is directly overhead and you cannot see your shadow. We call this the *hālāwai* or the "meeting". Everything "meets" there. The way I looked at it, Leleiwi or Iwilele, was that point—like a *leina* (jumping-off place for spirits) which was the opening into *pō* (realm where spirits go after physical death) that the spirits jumped into. Kianiaui is very close to Iwilele. Those are the two places that I recognize as the important places duringg the *hālāwai*. The *hālāwai* is in the month of Ikiiki, about the middle of May, probably about the 25th, or 27th of May. It's not the same every year—it changes each year. That would be the time of *kau* (summer), when the sun is moving up towards the northern-most point. Then, it comes up and it stops over Mokumanamana, Necker Island, and it stays ther for just a few days before it starts moving back down the island chain. Then it passes over us again, in the middle of Ka'aona, which is around July 15, 16, or 17—around there somewhere. It's really hard to say exactly which day because it changes from year to year. Those are the times when the sun passes directly overhead on Maui. And, to me, those are the two most important times on Haleakalā, as well as Haleki'i/Pihanakalani Heiau (McGuire 2000: 72).

Therefore, the significance of the solstices is as Mr. Naone describes:

We have to honor the sun for reaching its northernmost point and call it to come back and acknowledge its responsibility, acknowledged its journey up to here. It stops there and then it starts to come back. So, it the solstice, we're honoring the fact that the sun has made its journey and the sun has allowed us to do our farming, our harvesting

and whatever we need to do. And, when it comes down and it reaches its southernmost point, we honor it for that. That's what we do during the solstice (McGuire 2000: 75).

Although Mr. Naone knows that the observation of the *hālāwai* occurred on other prominent mountains such as Halemahina (an old reference to the West Maui Mountains), Mauna Kea and Mauna Loa, he explains that he only goes to Haleakalā to observe the *hālāwai*. He takes an offering or *ho'okupu* and sometimes an *'umeke* or calabash bowl and describes sitting there, "with a sense of 'sitting with the ancestors'" (McGuire 2000: 73). Mr. Naone describes chanting and simply being there at that moment, the sun having reached its zenith and, essentially, trying to do what his ancestors have done for generations (McGuire 2000: 73).

Ms. Holt-Padilla also goes to Haleakalā in observance of the solstices. She describes Haleakalā's coldness as a value that makes it special during winter solstice. It's also a time when not many other people are around. She describes it as a time when the air is thin and your body can experience the cold. Ms. Holt-Padilla describes the significance in just being there; at the same place her ancestors went to observe the summer and winter solstice (McGuire 2000: 61).

Kahu Maxwell states that there are cultural ceremonies that continue to take place within the 18-acre University of Hawaii parcel, but does not go into detail about those ceremonies (Table 3).

7.9 Impacts on Viewplane

In her interview with Ms. McGuire, Ms. Hokulani Holt-Padilla describes that one needs an uninterrupted view to make an emotional and physical connection to the place of importance. Without an uninterrupted view, the connection cannot be made, and this interferes with the *mana* of a place (McGuire 2000: 57). Ms. Holt-Padilla goes on to describe that it is the environment -- the trees, the rocks; the animals, the rain, the mists, the clouds, the ocean -- which Hawaiians worship. This is where the gods live and it is from the environment that Hawaiian comes. She explains:

When you need to give offerings at a *ko'a* so that you can have an abundance of fish, you need to be out there to talk about how the ocean is, how the sky is, where it is located and who you are trying to access because it is the environment that we are trying to access and we are trying to bring life to it and, therefore, it will bring life to us (McGuire 2000: 58).

Mr. Hinano Rodrigues also explains that "[t]o many Kanaka Maoli, the very unobstructed view of the *mauna* itself, is a part of their daily religious observations" (Section 7). Mr. Naone touches on the importance of an unobstructed viewplane in the Hawaiian culture. He describes that he does feel that it is culturally inappropriate to have things, such as buildings, obstructing the view, but he explains that it is more important that structures do not prevent the flow of *mana*. "So, I guess, what I'm saying is just the fact that there's something built and it's in sight, is it really blocking the flow, the movement of the spirits? I would be more concerned if there was an ancient trail there and the structure blocked that trail" (McGuire 2000: 85).

In reference to the Faulkes telescope he continues:

And, if it's just the fact that it's in view, personally, it wouldn't be objectionable to me. What I'm saying is, I'm sure the observatories are important. There's knowledge we're gaining from it. Yet, we hope and wish that they would be very sensitive to our

cultural beliefs. Cultural assessment studies at least forces developers to be aware of our beliefs. Am I totally objecting to Science City being up there? No, I'm not. Would I prefer that they not be up there? Yes. But, I have no real strong objection to something being built up there as long as cultural aspects are always taken into consideration—that we're not prevented from practicing what we believe in (McGuire 2000: 86).

Additionally, there are two *ahu* near the proposed project area at Pu'u Kolehale, one which faces west called Hinala'anui, and one which faces east called Pā'ele Kū Ai I Ka Moku. These *ahu* are described in (Maxwell 2006: 43-45). Mr. Ki'ope Raymond explains that a 360-degree viewplane from each *ahu* is important and presently the proposed ATST would be constructed less than 100 feet from the eastern *ahu* (Table 11).

The visibility of the proposed ATST, its white color particularly, concerns several individuals giving testimony. People feel it will be an eyesore and they would like to change the color to brown or a color that might not been seen as easily. Mr. Leslie Kuloloio voices his concerns regarding the color of the proposed ATST (Table 3). Mr. and Mrs. Pali want all efforts to be made to change the color in order to make ATST less visible (Section 7). It appears that people cannot accept the NSF statement that nothing can be done about the color. It is hard for people to understand why an entity that can create a huge solar telescope cannot figure out a way to make it a color besides white. There is the feeling in the testimonies that this can be done and people want this done at whatever the cost would be.

Many feel that the visibility of ATST will also take away from the wilderness aspect of the greater Haleakalā area. Echoing many others, Mr. Brian Jenkins explains that ATST will have a "tremendous negative impact on that sense of wildness that is currently enjoyed. This negative visual impact will also affect much on the Skyline Trail and views from the Upper Waiohuli Trail in the Kula Forest Reserve" (Section 7). In an overall sense, the size and white color of the ATST, as well as the day-to-day operation of the facility clearly present a negative cumulative impact on the viewplane.

7.10 Ceded Lands and Sovereign Identity

The Paūkukalo meetings saw a large Native Hawaiian turnout and from the transcripts it is clear that tensions were high, people were emotional and the meeting overall became unorganized. This resulted in people voicing their concerns on impulse and because of this, the transcriber was not able to get everyone's name. As noted in a speakers testimony, individuals left this meeting out of frustration without giving testimony (Table 7. Paūkukalo Community Center - May 1, 2006).

Much of the Paūkukalo testimonies reflect concerns over ownership of the land at the proposed site and at the summit area in general. There are concerns that these are ceded lands and that Native Hawaiians are the only ones with a true right to the lands. Several individuals would not go any further into discussion with NSF for this reason. Mr. Oliver Dukelow states, "[b]efore we can discuss anything, I would like to see your title to that land" (Table 7. Paūkukalo Community Center - May 1, 2006). There were some who explained that they did not recognize United States law at all and accused the presenter of, "...belligerently occupying this place." This individual went on to say, "Your law does not apply here. The superior law of the land is the domestic law that applies here, the *kumukānāwai*. The *kumukānāwai*, what's going on up

there is not supposed to happen. So what I'm saying is that what are you doing here? What are you doing here?" (Table 7. Paūkukalo Community Center - May 1, 2006). Kahu Maxwell attempts to explain the situation that existed at this meeting:

...hundreds of years of oppression of our people. When Captain Cook came in 1778, the missionaries came in 1820, the land put into sugar and pineapple; Hawaiians culture were turned around. ...It's the land that was taken away in 1893 and was controlled by Leleo Kalani. They made it into trust lands, then they had also government lands, but nobody has clear title of this land. You guys got to realize this (Table 7. Paūkukalo Community Center - May 1, 2006).

The feeling of the Hawaiian sovereignty movement is reflected in this statement made by an audience speaker: "...We are not under US law. We are an independent nation. We have never relinquished our nationhood. There is someone sitting in our seat of government. His name is Sam. We would like to ask him to leave so that we can fill our own seat with our own people" (Table 7. Paūkukalo Community Center - May 1, 2006). Mr. Kapali Keahi also touched on this theme, addressing the panel; he stated: "...it's not a good time for you guys. It's never going to be. As long as that flag is waving, it's never going to be one good time for you guys. And we can say this now in this day and time because, well, your predecessors, your ancestors wen' shut our people up. And the only reason why America is here is because of the military." It is clear that there is a population that believes Hawai'i is a sovereign nation.

Feelings of mistrust and frustration towards the government and its processes such as Section 106 are reflected in statements made by Ms. Roselle Bailey and Mr. Sam Ka'ai. Ms. Bailey and others are not convinced that ATST isn't a covert military operation. She expresses the concerns of many when she suggests that the entire state might be put in danger. Ms. Bailey's frustration is equally apparent with the section 106 process. She refers to section 106 as "foreign law" and describes how wrong it is to ask the Hawaiian people to, in essence, prove their beliefs in order to maintain the integrity of a site they consider sacred.

Sharing his skepticism with the section 106 process, Mr. Ka'ai explains that it's not worth sharing cultural knowledge anymore because, he says, "no one listens" (Section 6.1.9). He has noticed that studies such as this one don't make a difference in the outcome of a project, therefore he and other cultural practitioners would rather not waste their time sharing what they know.

7.11 Haleakalā as a Traditional Cultural Property

A traditional cultural property (TCP) "can be defined generally as one that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are (a) rooted in the community's history and (b) important in maintaining the continuing cultural identity of the community" (National Register Bulletin No. 38). Based on the background research and community consultation conducted for this study, public testimony resulting from the Section 106 process, and the above discussion on traditional cultural practices, it is unquestionably clear that the caldera and summit of Haleakalā is a Native Hawaiian traditional cultural property with Pan-Polynesian significance.

In a letter from the State Historic Preservation Division, Mr. Peter Young states, "Haleakalā Summit unquestionably represents a Traditional Cultural Property" (Table 12). In their review, the Cultural Resource Commission states, "The proposed telescope is not consistent with the

designation of the summit of Haleakalā as a Traditional Cultural Place or Property (TCP) and its eligibility for listing on the National Register of Historic Places” (Table 12).

7.12 Economic Concerns

There is concern over the amount of money that will be spent on ATST. Some feel the money should be spent to help Hawaiians get a college education, “[g]ive us the money so I can get my bachelor's degree, my master's, and the future of the land and the water.” Ms. Toni Dizon makes this statement explaining that the money would be better spent on Hawaiians who want to get an education so that they can help the community themselves (Table 7. Paūkukalo Community Center - May 1, 2006).

Section 8 Summary and Recommendations

It is clear that Mauna Haleakalā, from past to present, is a significant part of traditional Hawaiian culture and that to the majority of the Native Hawaiian community who participated in this process, the construction and operation of the proposed ATST presents a negative impact on the summit of Haleakalā. The mountain and summit play significant roles in traditional Hawaiian lore and epic battles between the elements and the gods. From traditional times to the present day, *kanaka maoli* (Native Hawaiians) ascend the mountain to engage in ceremonial activities either within a group setting (e.g. with *hula halau* or to observe the *Makahiki*) or in solitude. The magnificence and serenity of the mountain is voiced not only from Native Hawaiian people, but from non-Hawaiians as well. Narratives from non-Hawaiians as far back as the first missionary accounts of their first view and ascent of the mountain attest to the majestic presence of Haleakalā (see Section 3.3 Early Historic Era to the Late-1800's.). This is clearly felt into the present time as visitors to Maui continue to make the trek to the summit to greet the day.

It is apparent that significant immediate and cumulative impacts are expected by the proposed ATST facility atop Haleakalā. Immediate and short-term impacts to the summit of Haleakalā would be associated with activities directly related to the construction of the facility itself, as well as the potential impacts to the surrounding infrastructure during the construction phase (i.e. soil and construction staging areas and/or increased use of the roadways). For the *kanaka maoli*, the physical excavation of the cinder itself is seen as a desecration of the *kinolau* or body of Pele herself (see Section 5 Scoping Meetings and Section 106 Testimony). There are disagreements within the community as to the degree to which this type of impact can be mitigated, if at all. Steps toward preservation and education with regard to Native Hawaiian cultural beliefs and sense of place have been put forth in “*Ku I Ka Mauna*” *Upright At the Mountain. Cultural Resources Evaluation for the Summit of Haleakalā* (Maxwell 2003), a document prepared as a part of the Haleakalā High Altitude Observatory Site Long Range Development Plan (KC Environmental 2005)

To limit the assessment of the cumulative and long-term impacts of the proposed ATST undertaking to the 18.166-acre area would be difficult, as the overall size and color of proposed facility would have a more wide-ranging effect and need to take into account the whole of the summit and crater area. Based on the testimony presented by the community, there is a necessity for an unimpeded viewplane from mountain to ocean, particularly in the context of ceremonial activities at the east and west *ahu* within the HO parcel itself. It is clear that the height and color of the proposed facility would impede the viewplane and is seen by some as a personal affront to their cultural beliefs. From a traditional Hawaiian viewpoint, the unaesthetic nature of the facility has led to further objections to the observatory as an additional “eye sore” to the summit area. It would compound the negative impacts of the already existing facilities.

The anticipated negative impacts to Haleakalā that would result from the construction and day-to-day use of the ATST facility brought forth strong opposition from the majority of the Native Hawaiian community who participated in the scoping and public commentary period. Responses to the proposed facility were deeply emotional and, for some, the idea of an additional building atop the summit was physically painful. Overall, there is a belief that to go forward with the proposed undertaking would be a desecration of a sacred site, with some equating the impacts to building an observatory next to the Wailing Wall in Jerusalem or within the city of Mecca.

Although testimony in support of ATST was scarce, it was as convincing and equally heart-felt as the opposition. In most instances, supporters strongly rallied for education of Hawai'i's youth and the possible opportunity that such a facility might bring to Native Hawaiians.

Along these lines, two proposals, submitted by Mr. Warren Shibuya and Kahu Charlie Maxwell, were put forth as a potential means to mitigate the impacts of the proposed undertaking. While these individuals may not agree with or support the construction of the ATST, there is a feeling that Native Hawaiians may be able to gain some compensation in the form of educational facilities from allowing for the use of the summit for astronomy and observation. Mr. Shibuya suggested policies that include: hiring Maui residents for all phases of work; establishing a Maui Solar and Hawaiian Cultural Center; to require ATST to develop a sunset clause, where at a determined time ATST is removed and the site is restored to its natural state; and that all streets and facilities be given Hawaiian names.

Kahu Maxwell proposed the development of Hālau 'Imi 'Ike Hōkū, Center for Traditional Hawaiian Navigation and Astronomy. This center would aim to bring traditional Hawaiian celestial knowledge together with modern science and astronomy. It would include a planetarium and provide scholarships to Maui residents for post high-school education (KC Environmental, FIES in press).

Informal proposals presented in a talk-story format by the Kahikinui Homestead Community included full-ride scholarships for Native Hawaiian students with an award preference to the students and youth of Kahikinui, as well as the development of a mentorship program between Native Hawaiian students and scientists working atop Haleakalā. The goal of the proposed programs would be to even the educational field and, as Kahu Maxwell points out in his proposal, make it possible for Native Hawaiians to become experts in the subject. The implication being that someday, those studying and operating the observatory facility would be *kanaka maoli*.

8.1 Recommendations

In order determine the level to which there are either beneficial (positive) or adverse (negative) impacts resulting from the proposed undertaking the following was proposed during in the DEIS (KC Environmental 2006: 4-3):

1. Significant impact;
2. Significant impact but mitigable to less than significant;
3. Less than significant impact;
4. No impact; or
5. Beneficial impact

Based on the information gathered during the course of this study and presented in this report, the overwhelming evidence, from a cultural and traditional standpoint, points toward a significant adverse impact on Native Hawaiian traditional cultural practices and beliefs. This determination of significant adverse impact would apply to both the preferred Mees Location and the alternative Reber Circle location. To the majority of Native Hawaiians and non-Hawaiians who participated in this process, the proposed undertaking is unmitigable and therefore,

following the “No Action” alternative and keeping both the Mees site and Reber Circle site in their current undeveloped state was strongly recommended.

In the event that the proposed undertaking is approved and funding secured, it is highly recommended that more time for mitigative proposals be allotted and the development of working relationships with Native Hawaiian groups be actively pursued. As Haleakalā plays a central role in the history and culture of Maui Island *kanaka maoli* it is imperative that there be open lines of communication and that every effort is made to hear, understand, and respect the cultural concerns and beliefs of the community during the course of project construction as well as through out the operational time span of the facility itself.

Section 9 References

Abbott, Isabella

- 1992 *Lā'au Hawai'i Traditional Hawaiian Uses of Plants*. Bishop Museum Press, Honolulu, HI

Alexander, William DeWitt

- 1870 On the Crater of Haleakala, Island of Maui. *American Journal of Science* 49 (145): .

Armitage, George T. and Henry P. Judd

- 1944 *Ghost dog and other Hawaiian legends*. Helen Lamar Berkey, editor. Hawaii Advertiser Publishing Co., Ltd., Honolulu, HI.

Ashdown, Inez MacPhee

- 1971 *Ke Alaloe o Maui; the broad highway of Maui*. Ace Print. Co., Wailuku, HI

Beckwith, Martha

- 1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu, HI.

Bryan, William Alanson, B.Sc.

- 1915 *Natural History of Hawaii, Being an Account of the Hawaiian People, the Geology and Geography of the Islands, and the Native and Introduced Plants and Animals of the Group*, The Hawaiian Gazette Co., Honolulu 1915.

Bushnell, K.W. and Hallett H. Hammatt

- 2000 *An Archaeological Inventory Survey of 1.5 Acres of the University of Hawai'i Facility at Haleakalā, Papa'anui Ahupua'a, Makawao District, East Maui (TMK 2-2-07:8)*. Prepared for KC Environmental Inc. Cultural Surveys Hawaii, Inc. Kailua, HI.

Chatters, J.C.

- 1991 *Cultural Resources Inventory and Evaluation for Science City, Haleakala, Maui*. Pacific Northwest Laboratories, WA.

Colum, Padraic

- 1924 *At the Gateways of the Day*. Published for the Hawaiian Legend & Folklore Commission. Yale University Press, New Haven, Connecticut.
- 1960 *Legends of Hawaii*. Yale University Press, New Haven, Connecticut.

Cumming, C. F. Gordon

- 1881 *The Largest Extinct Volcano*, Scribner's Monthly, Vol. XXII, May-Oct 1881, The Century Co., New York.

Dana, James D.

- 1890 *Characteristics of Volcanoes: With Contributions of Fact and Principles from the Hawaiian Islands*. Sampson, Low & Co., London.

Day, Robert H., Adrian E. Gall, Robert M. Burgess, and Julie P. Parrett

- 2005 *Movements of Hawaiian Petrels Near USAF Facilities Near the Summit of Haleakala, Maui Island, Fall 2004 and Spring 2005*. Prepared for USAF AFL c/o Boeing LTS. ABR, Inc. – Environmental Research & Services. Fairbanks, AK.

Dodge, F.S.

- 1885 *Maui, Hawaiian islands/primary triangulation by W.D. Alexander and S.E. Bishop; topography and boundaries by W.D. Alexander, C.J. Lyons, M.D.Monsarratt [map]. Scale = 1:90,000. Hawaiian Government Survey. On file at the Library of Congress Geography and Map Division, Washington D.C. Digital ID g4382m ha000012 <http://hdl.loc.gov/loc.gmd/g4382.ha000012> (last accessed July 2005)*

Dutton, Captain Clarence Edward

- 1883 *Hawaiian Volcanoes, Report of the Director of the United States Geological Survey, Department of the Interior, United States Geological Survey, Washington D.C. July 1, 1883, Government Printing Office, Washington, D.C.*

Elbert, Samuel H.

- 1959 *Selections from Fornander's Hawaiian Antiquities and Folk-Lore.* University of Hawaii Press, Honolulu, HI.

Ellis, Reverend William

- 1826 *Narrative of a Tour Through Hawaii, or Owhyhee; with Remarks on the History, Traditions, Manners, Customs and Language of the Inhabitants of the Sandwich Islands,* Published for the Author by H. Fisher, Son, and P. Jackson, Caxton, London.
- 1963 [1826] *Narrative of a Tour of Hawaii, or Owhyhee; with Remarks on the History, Traditions, Manners, Customs and Language of the Inhabitants of the Sandwich Islands.* Advertiser Publishing Company, Honolulu.

Emerson, Nathaniel B.

- 1915 *Pele and Hiiaka, A Myth From Hawaii.* Honolulu Star-Bulletin Limited. Honolulu, HI.

Emory, Kenneth P.

- 1921 *An Archaeological Survey of Haleakalā,* Occasional Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, VII (11), Bishop Museum Press, Honolulu.

Fitzpatrick, Gary L.

- 1986 *The Early Mapping of Hawai'i,* Editions Limited, Honolulu.

Folk, William H. and Hallett H. Hammatt

- 1997 *Field Inspection of Four Localities at Haleakalā for Installation of Remote Weathering Stations (REMS).* Cultural Surveys Hawaii, Inc. Kailua, HI.

Fornander, Abraham

- 1918-1919 *Fornander Collection of Hawaiian Antiquities and Folk-Lore, The Hawaiians' Account of the Formation of their Islands and Origin of their Race, With the Traditions of their Migrations, Etc., As Gathered From Original Sources.* Memoirs of the Bernice Pauahi Bishop Museum, Vol. V, Bishop Museum Press, Honolulu.

Fornander, Abraham

- 1921 *Fornander Collection of Hawaiian Antiquities and Folk-Lore, The Hawaiians' Account of the Formation of their Islands and Origin of their Race, With the Traditions of their Migrations, Etc., As Gathered From Original Sources*, Memoirs of the Bernice Pauahi Bishop Museum Vol. VI, Pt. III. Bishop Museum Press, Honolulu.

Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, and Floyd Stephens

- 1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. United States Department of Agriculture, Soil Conservation Service, in Cooperation with the University of Hawaii Agricultural Experiment Station. U.S. Government Printing Office, Washington D.C.

Fredericksen, Erik M.

- 2006 *An Archaeological Field Inspection of the Primary and Alternate Locations for the planned Advanced Technology Solar Telescope (ATST) Facility, located within the 18.1-acre parcel Science City complex, Haleakala Crater, Papa'anui Ahupua'a, Makawao District, Maui Island (TMK: 2-2-07: portion of 8)*. Xamanek Researches, Pukalani, HI.

Fredericksen, Erik M. and Demaris L. Fredericksen

- 2003 *Archaeological Inventory Survey of 18.1-acre Parcel at Science City, Haleakala Crater, Papa'anui Ahupua'a, Makawao District, Maui Island (TMK: 2-2-07: Por. of 8)*. Prepared for KC Environmental, Inc. Xamanek Researches. Pukalani, HI.

Fredericksen, Erik M., Demaris L. Fredericksen and Walter M. Fredericksen

- 1996 *Archaeological Inventory Survey of GTE Hawaiian telephone Haleakala Fiber Optics Ductline Corridor, Papaanui and Kaonoulou Ahupua'a, Makawao District, Maui Island (TMK: 2-2-07:1, 2, 5, 10, 11, 12; 2-2-06:9)*. Xamanek Researches. Pukalani, HI.

Giambelluca, Thomas W., Michael A. Nullet and Thomas A. Schroeder

- 1986 *Rainfall Atlas of Hawa'i*. Prepared for the State of Hawai'i, Department of Land and Natural Resources, Division of Water and Land Development. Honolulu, HI.

Gowan, Rev. Herbert H.

- 1908 *Hawaiian Idylls of Love and Death*. Cochrane Publishing Co., New York.

Green, Laura S.

- 1923 *Hawaiian Stories and Wise Sayings*. Edited by Martha Warren Beckwith. Vassar College, Poughkeepsie, NY.

Hapai, Charlotte

- 1921 *Legends of the Wailuku, as Told by Old Hawaiians and Done into the English Tongue*. The Charles R. Frazier Company, Honolulu, HI.

Hawaii State Department of Health Office of Environmental Quality Control

- 1997 Guidelines for Assessing Cultural Impacts. Electronic Document, <http://www.state.hi.us/health/oeqc/guidance/cultural.htm> accessed April 2007.

Henshaw, H. W.

- 1902 *Birds of the Hawaiian Islands, Being a Complete List of the Birds on the Hawaiian Possessions, with Notes on their Habitats*. Thos. G. Thrum, Hawaiian Gazette Co., Honolulu.

Hitchcock, C. H.

1909 *Hawaii and Its Volcanoes*. The Hawaiian Gazette Co., Honolulu.

Jackson, Frances

1972 Military use of Haleakala National Park, article, *The Hawaiian Journal of History*, Vol. 6, The Hawaiian Historical Society, Honolulu.

Juvik, Sonia P. and James O. Juvik, eds.

1998 *Atlas of Hawai'i*. Third Edition. Department of Geography, University of Hawai'i at Hilo. University of Hawai'i Press Honolulu, HI.

Kalakaua, David

1888 *The Legends and Myths of Hawaii. The Fables and Folk-Lore of a Strange People*, edited by the Honorable R. M. Daggett, Charles L. Webster & Co., New York.

KC Environmental, Inc.

2005 *University of Hawai'i Institute for Astronomy Haleakalā High Altitude Observatory Site Long Range Development Plan*. KC Environmental Inc. Makawao, HI.

2006 *Draft Environmental Impact Statement Advanced Technology Solar Telescope*. Prepared for the National Science Foundation. KC Environmental Inc. Makawao, HI.

Kolb, Michael J., Patty J. Conte, and Ross Cordy

1997 *Kula: The Archaeology of Upcountry Maui in Waiohuli and Kēōkea: An Archaeological and Historical Settlement Survey in the Kingdom of Maui*. Prepared for the Department of Hawaiian Home Lands. Historic Preservation Division, Department of Land and Natural Resources. Honolulu, HI

Liliuokalani, Queen Lydia

1897 [1856] *The Kumulipo*, translated by Liliuokalani from the original manuscript by David Kalakaua, Boston.

Lawrence, Mary S

1912 *Stories of the Volcano Goddess, With a Brief Description of the Volcano and How to Get There*. Crossroads Bookshop, Honolulu, HI.

Luomala, Katherine

1949 *Maui-Of-A-Thousand-Tricks: His Oceanic and European Biographers*. Bernice Pauahi Bishop Museum, Bulletin 198. Bishop Museum Press, Honolulu.

Lyons, Barbara

1969 *Maui, Mischevious Hero*. Petroglyph Press, Hilo, HI.

Maxwell, Charles Kauluwehi Sr.

2002 *Archaeological Cultural Assessment Survey at Haleakala. "Ku I Ka Mauna" Upright At The Mountain. Traditional Practices Assessment for the Summit of Halekalā*. CMK Cultural Resources.

2003 *"Ku I Ka Mauna" Upright At the Mountain. Cultural Resources Evaluation for the Summit of Haleakalā*. CKM Cultural Resources.

Maxwell, Charles Kauluwehi Sr.

- 2006 *E Mālama Mau Ka La'a. A Cultural and Historical Compilation of Resources Evaluation and Traditional Practices Assessment. Cultural Resources Evaluation and Traditional Practices of the Proposed Advanced Technology Solar Telescope (ATST) at Haleakalā High Altitude Observatory.* CKM Cultural Resources L.L.C.

McGuire, Ka'ohulani and Hallett H. Hammatt

- 2000 *A Traditional Practices Assessment for the Proposed Faulkes Telescope on 1.5 Acres of the University of Hawai'i Facility at Haleakalā, Papa'anui Ahupua'a Makawao District, Island of Maui.* Cultural Surveys Hawai'i, Oahu.

Metger, Berta

- 1929 *Tales Told in Hawaii.* Frederick A. Stokes Company, New York.

Moffat, Riley M., and Gary L. Fitzpatrick

- 2004 *Mapping the Lands and Waters of Hawaii,* Editions Limited, Honolulu.

Nakuina, Emma M.

- 1904 *Hawaii, Its People, Their Legends.* Hawaii Promotion Committee. Honolulu, TH.

National Register Bulletin No. 38

- 1998 *Guidelines for Evaluating and Documenting Traditional Cultural Properties.* U.S. Department of the Interior, National Park Service. Electronic document (<http://www.cr.nps.gov/nr/publications/bulletins/nrb38/>) last accessed April 2007

Pukui, Mary K.

- 1960 *Tales of the Menehune and Other Short Legends of the Hawaiian Islands.* Kamehameha Schools Press, Honolulu, HI.

Pukui, Mary K., and Samuel H. Elbert

- 1986 *Hawaiian Dictionary: Hawaiian-English, English-Hawaiian.* University of Hawai'i Press. Honolulu.

Pukui, Mary K., Samuel H. Elbert, and Esther T. Mookini

- 1974 *Place Names of Hawaii.* University of Hawaii Press. Honolulu.

Rosendahl, Paul H.

- 1978 *Preliminary Overview of Archaeological Resources at Haleakala National Park, Island of Maui.* P.P. Bishop Museum, Department of Anthropology. Honolulu, HI.

Sanderson, Marie, ed.

- 1993 *Prevailing Trade Winds, Weather and Climate in Hawai'i.* University of Hawai'i Press, Honolulu, HI.

Skinner, Charles M.

- 1900 *Myths & Legends of our New Possessions & Protectorate.* J.B. Lippincott Company, Philadelphia, PA and London.

Soehren, Lloyd J.

- 1963 *An Archaeological Survey of Portions of East Maui, Hawaii.* Prepared for the United States National Park Service. Bernice P. Bishop Museum, Department of Anthropology. Honolulu, HI.

Stearns, Harold T., and Gordon A. Macdonald

- 1942 Geology and Ground-Water Resources of the island of Maui, Hawaii, Bulletin 7, Territory of Hawaii, Division of Hydrography, Prepared in Cooperation with the Geological Survey, U.S. Department of the Interior, Printed in Hawaii.

Sterling, Elspeth P.

- 1998 *Sites of Maui*. Bishop Museum, Honolulu, Hawai'i.

Taylor, Reverend Richard, M.A., F.G.S.

- 1870 *Te Ika A Maui; or, Aotearoa and its Inhabitants, Illustrating the Manners, Customs, Mythology, Religion, Rites, Songs, Proverbs, Fables, and Language of the Maori and Polynesian Races in General; together with the Geology, Natural History, Productions, and Climate of the Country*, London, William MacIntosh and H. Ireson Jones, Wanganui, Aotearoa.

Thrum, Thomas G.

- 1917 *Hawaiian Folk Tales; a Collection of Native Legends*. A.C. McClurg & Co., Chicago, Illinois.

U.S. Department of the Interior, National Park Service

- 2006 Hawaii Nature Notes the Publication of the Naturalist Division, Hawaii National Park and the Hawaii Natural History Association. Electronic document, http://www.cr.nps.gov/history/online_books/hawaii-notes/vol6-59g.htm accessed March 2007.

Von Tempski, Armine

- 1940 *Born In Paradise*, Hawthorn Books Inc., New York.

Walker, Winslow

- 1931 *Archaeology of Maui*. Manuscript in Department of Anthropology, Bernice Pauahi Bishop Museum. Honolulu, HI

Westervelt, W. D.

- 1910 *Legends of Ma-ui – A Demi-God of Polynesia and of his Mother Hina*, foreword by S. Percy Smith, Hawaiian Gazette Co. Ltd. Honolulu.
- 1916 *Hawaiian Legends of Volcanoes, Collected and Translated from the Hawaiian*, G.H. Ellis Press, Boston.

Wilkes, Charles, Commander United States Navy

- 1852 *Narrative of The United States Exploring Expedition During the Years 1838, 1839, 1840, 1841, 1842, In Two Volumes With Numerous Engravings*. Vol. II, National Illustrated Library Edition, Ingram, Cooke and Co., Strand, London.

Appendix A ATST Petition – Unknown Origin

Table A- 1. Petition in Support of ATST2

Table A- 1. Petition in Support of ATST

Last Name	First Name	Last Name	First Name	Last Name	First Name
Aguinaldo	Sheila	Gentry	Kristopher	Mathews	Geoffrey
Ah Loy	Darleen	Gibbs	Francina	Maune	Kay
Anger	Robert	Gresham	Mike	McCreight	David
Bangerter	Bob	Guenther	Kirsten	McLaren	Robert
Bernardo	Kristin	Hallett	Illegible	Meola	Gary
Bobbio	Kate	Hamai	Jean	Moessner	Debra
Bourque	Monique	Heafey	Derek	Mooney	Wendy
Brandenburg	Donald	Heasley	James	Morales	Desiree
Cameron	Ashley	Hofmann	Andrea	Morales	Nancy
Cameron	Jyl	Hogan	Lauren	Munger	Kelly
Carrajal	Christina	Illegible	Willie	Nagasaki	D.
Ceravolo	Debra	Illegible	William	Nassir	Michael
Ceravolo	Peter	Illegible	James	Nathan	Melidee
Conrad	Cynthia	Illegible		Nitta	Gary
Cost	Curtis	Illegible	Stephen	Orwig	Darrell
Cost	Elliott	Inskie	Karen	Perreira	Warren
Currell	Illegible	Janoski	Darlene	Pope	Julian
Currell	Pat	Javier	Paul	Popkipala	Jean
DeAngelis	Pierpaolo	Jedicke	Robert	Putris	Xander
Devey	Graham	Jennings	Karen	Quimby	Larry
Domsitz	Nikki	Jennings	R. Virginia	Rafaman	Chester
Doran	James	Kadooka	Mary Ann	Reeve	Clara
Doyle	Linda	Kamibayashi	Jacob	Resta	Piero
Dunn	Sara	Kanen	Randi	Rogers	Colin
Durish	Gary	Kasprzycki	Jan	Sanchez	Johna
Elkins	Robert	Kikuyama	Ben	Sattler	Kay
Erickson	Becky	King	Dorian	Smith	Ron
Filler	Tim	Kolahi	Bobby	Souza	Lisa
Findley	Malcolm	Kornreich	Steven	Talbot	Kristina
Flanders	Carmen	Land	Larry	Talbot	Thomas
Fleming	Shaun	Lite	Gary	Wagstaff	Winnie
Foreman	Craig	Lombardi	Henry	White	Dennis
Frost	Karen	Long	William	Young III	Louis
Fujuhara	Gary	Makaena	Felisha		
Garcia	Megan	Marie	Lynnie		
Gaxion	Cesar	Martinez	Sal		

Appendix B Kilakila O Haleakalā Petition

Table B- 1 Petition Supporting "No Action" Alternative	2
Table B- 2. Petition Supporting "No Action" Alternative with Request to Become a Consulting Party.	8

Table B- 1 Petition Supporting "No Action" Alternative

Last Name	First Name	Last Name	First Name	Last Name	First Name
`Aikala	Manaloa	Auhoon	Gardenia	Calvan	Roger
`Akahi	Pomaikai	Auwae	Makamae	Cantor	Anna
Abraham	Susan	Avieiro	Scott	Capertina	Hulu/Theodore
Ackermann	Dieter	Bailey	John	Cappadocia	Ragita
Acopan	Janice	Baker	Amy	Carbonni	Christopher
Adkins	Allen	Bal	Brandon	Carrion	Kili`ohu
Adkins	Reiko	Bassil	Galal	Carter	Jamie "Kamiki"
Agcaoili	Regina	Bayly	Katy	Casayuran	Jesse
Aiwohi	Ka`apuni	Beck	Karen	Cashman	Ed
Aiwohi	Maile	Bell-Cockett	Palika	Castro	Chaz
Aiwohi	Pi`imauna	Belmonte	Jake	Chambers	Nancy
Aiwohi-Kolt	Hi`ilei	Benavides	Burke	Chappell	Graham
Akita-Kealiha	Thelma	Benavides	Carlotta	Char	Corey
Akiu	Renee	Benavides	Roxane	Chargualaf	Christen
Alexander	Elena	Biga	Jaydina	Chin	Loretta
Alo-Palau	Myrlynette	Bissen	Isabella	Chong Kee	Kenneth
Altinbay	Tan	Boller	James	Chong Kee	Rhoda
Amakawa	Mayumi	Bolos	Laurie	Chow	Nara
Amaral	Debbi	Bolos	Robin	Chun-Gilliland	Chalice
Ambrose	Kristlyn	Bonillon	Cheryl	Clark	April
Anakalea	Clyde	Brada	Garett	Cohen	Joanne
Anseth	Andrew	Bras	R. Kalei	Collier	Kiai
Anthony	Iliahi	Brault	Sachiko	Collins	Lance
Anzai	Harriette	Brown	Debbie	Cornelio	Jeffrey
Apo	Alexander	Buetzer	Hans	Cravalho	Carmelita
Apo	Kelsey	Bush	Alana	Crow	Diana
Aquino	Princess Lehuanani	Bush	Nana	Cusi	Karen
Arakaki	Jaye	Bush	Roger	Czok	Jutta
Armitage	Malia	Bustamente	Keahi	Davidson	Malia
Armstrong	Elisabeth	Butterman	Ansgar	Davis	Jonathan
Armstrong	Sue	Butterman	Ieka	De Journette	Marie
Asis	Joe	Cabrera	Ryan	DeFries	Heather
Astrella	Rachael	Cadiz	Corinna	DeFries	Jacob
Atay	Daniela	Cagasan	Ed	Dela Cruz	Joelyn
Atay	Don	Calabrese	Margo	Dela Cruz	Michal
Athearn	Jamie	Calandrella	Leanne	Dela Cruz	Moi Maikai

Last Name	First Name	Last Name	First Name	Last Name	First Name
Dela Cruz	Robert	Faye	Hoku	Harima	Keiko
Delapinia	Thomas	Fazio	Tara	Harrowby	Caitlin
Delos Santos	Lesley	Feiteira	Jessie	Hartman	Robert
DeMello	Bessie	Feliciano	Joella	Haus	Dorothee
DeMello	Melany	Fenzl	Ronnie	Haus	Werner
deNaie	Lucienne	Ferreira	Chad	Hawkins	Anna
DeShayne	Nece	Figuracion	Dimpag	Heffman	Jennifer
DeStephano	Clara	Filimoe`atu	Kehaulani	Helm	Kandy
Dias	Pohai	Flores	Ariana	Helm	Rusty
Diego	Maile	Fratantonio	Robert	Helm	Violet
Drake	Lee	Fujimoto	Karen	Helm	Wilfred
Dukelow	Jamie	Fujiyama	Michelle	Henderson	Jason
Dukelow	John	Furukawa	Colleen	Hewahewa	Kepa
Dukelow	Kapualokeokuuleinani	Gacek	Claudia	Higa	Mike
Dumangeng	Percival	Gaddis	Summer	Higa	Rhys
Duquette	Jason	Gangini	Carla	Higgins	Roberta
Duranleau	Nicole	Garalde	Brian	Hill	Richard
Dye	Rachael	Garnet	Tom	Hinaga	Garrick
Eaton	Cleighton	Garrison	Charles	Hinau	Curtis
Eaton	June	Gilliland	Puanani	Ho	Holiann
Eaton	Kalena	Godinez	Marcia	Ho	Kaipo
Eaton	Kaua	Goebel	Michael	Ho	Renfred
Eaton	Keomailani	Goldberg	Tasha	Ho`pai	Kapono
Edlao	Gail	Gonzales	Rosa	Hoe	Kawaiolima
Edlao	Heather	Gormley	Kapa`ia	Hoisington	Wendy
Elliott	Bill	Gottlieb	Brookelin	Hokoana	Queenie
Ellis	Leilani	Goudreau	Vincent	Holi	Puanani
Emata	Gerilyn	Goya	Ernesto	Hong	Leah
Emata	Grace	Greenleaf	Masta	Hong	Leinani
Ennehoser	Carolyn	Gusman	Brenda	Hooks	Ash
Enos	Vicky	Haake	Kekuulani	Hu`eu	Jonah
Esotov-Chang	Maria	Habbwitz	Jeanette	Hubin	Sheila
Evangelista	Danny	Hagerty	Patrick	Huerter	Carissa
Evangelista	Ernesto	Halbitter	Ute	Hueter	Samantha
Evangelista	Justina	Haleakala	Jaevin	Hueu	Sunnie
Evangelista	Teri	Hamoru	Charlotte	Hunt	Corinne
Evanson	Mary	Hara	Kuninori	Iao	Maydeen
Ewaliko	Catalina	Hara	Maui	Ichiki	Vivian
Farin	Lokalia	Hara	Mitsuko	Ige	Stan

Last Name	First Name	Last Name	First Name	Last Name	First Name
Illegible	D. Ann	Kaiwi	Jasmyn	Kenolio	Punahale
Illegible	Mathew	Kalua	Manaiakalani	Kepano	Doreen
Illegible	Jared	Kama	Jeremiah	Khalafalla	Ryoko
Inacker	Dr. Matthias	Kamakana	Liane	Kiakona	Pa'ele
Inouye	Nichole	Kamakana	Veronica	Kimokeo	Aliiloa
Irwin	Julie	Kamalii	Jeremiah	Kimokeo	Puawehiwa
Ishii	Richard	Kamalii	Robert	Kimokeo	Sommer
Ishikawa	Noelle	Kana	Charlene	Kincaid	Kaipō
Ishikawa	Trina	Kanekoa	Kamalani	Kneubuhl	Robyn
Ishikawa	Wayne	Kanekoa	Noelani	Koki	Claire
Jamgochian	Jamie "Kamiki"	Kaniaupio-Crozier	Jerian	Kolt	Gaylord
Jamgochian	Mark	Kaniaupio-Crozier	Kaleialoha	Kong	Leinoa
Jarvier-Grodan	Anna	Kaniho	Natassja	Kuaana	Danielle
Javier	Nic	Kaniho	Tiffany	Kuailani	Steven Kapena
Jennifer	Adamson	Kantarova	Pamela	Kuali'i	Kipukai
Jensen	Jennifer	Kapaku	Kenda	Kuamo'o	Pi'imaana
Jeremiah	Debra Pua	Kapaku-Kahu	David	Kukea-Shultz	Jonathan
Johnson	Daryl	Kapu	Rochelle	Kupahu	Kahiwaonalani
Johnson	Faryn Kalei	Kare	Britta	Kusunoki	Mea
Johnson	Ginger	Kasai	Katsuharu	Kutsutani	Michelle
Johnson	Kaylee	Kato	Mr. and Mrs. Gary	Lani	Pasha
Johnson	Kiana	Katsutani	Michelle	Larin	Cherrie Ann
Johnson	Melia	Kaufmann	Merrill	Laymon	Lynn
Johnson	Tanya	Kauhane	Keith	Leahy	Chris
Jones	Sarah	Kauhane	Patti	Lee	Carol-Marie
Joy	Lawakua	Kawa'a	Kamalani	Lee	J. K. L.
Kahakauwila	Aulii	Kawa'a	Luana	Lee	Jovel
Kahula	Patience	Kawachi	Kurt	Lee	Ka'uhano
Kahalehau	Kaha	Kealoha	Daniel	Lee	Kimoku
Kaho'ohalahala	Haaheo	Keany	Mary	Lee	Noelani
Kaho'ohalahala	Lynn	Kehahuna	Lono	Lees	Laura
Kaho'ohalahala	Pualani	Kekahuna	Ashley	Lemmo	Roni
Kaho'ohalahala	Sol	Kekahuna	Erika-Lei	Leong	Debra
Kaho'ohanohano	Iris	Kekahuna	Haokeakumehokealani	Levin	Penny
Kaho'ohanohano	Suzette	Kekahuna	Ilikea	Lewis	Ashley
Kaholokua	William	Kekahuna	N. Lonohiwa	Lewis	Lori
Kahula	Illegible	Kekahuna	S. Kamaile	Librando-Souza	Kalani
Kaikala	Pohai	Kekoolani	Tine	Life	Kaiuipuni
Kaina	Orpha	Keller	Karen	Lincoln	Jody

Last Name	First Name	Last Name	First Name	Last Name	First Name
Lincoln	Travis	Mederiros	Kanoelani	Nakoa	Peter
Llego	Shannon	Mederiros	Reina	Namau`u	Daunserly
Lockard	Jordan	Mercier	Deanne	Needham	Kimo
Logotala, Jr.	Faalata	Meyer	Stacy	Newlight	Nadine
Lorenzana	Ashley	Michaels	Lesley	Nickens	Ivy
Lovell	Robert	Michaelson	Paul	Nikaido	Mark
Lu`uwai	Leona	Michimoto	Glenn	Nishida-Magaoay	Crystal
Lucas	Richard	Michimoto	Ryan	Nishikawa	Lois
Lussich-Prete	Nohea	Michimoto	Sandra	Noneza	Carmela
Lyman	Kahala	Miftahittin	Shariff	O`Rourke	Ann
Macik	Tyndale Mathew	Miguel	Edward	Oana	Rosean
Maeda	Doris	Miguel	Laura Ann	Offerman	Robert
Maeda	Richard	Miguel	Lori Michelle	Offerman	Susan
Maio	Bernadine	Miguel	Shari	Okamura	Gain
Maldonado-Morgan	Justine	Mikell	Bob	Okimoto	Andrew
Manloue	Christina	Miles	Sara	Oliveros	Geraldine
Manoa	Brittney	Minker-Scorzelli	Margaret	Oliveros	Lisa Ann
Manuel	William	Mitnick	Robert	Oliveros	Pedro
Marchetti	Kathy	Miyagawa	Doreen	Orikasa	Yoshimichi
Marks	Mayumi	Mjehovich	Carol	Orikasa	Yukie
Marks	Richard	Moleta	Chazz	Ornellas	Barbara
Marmack	Tim	Molina	Jordan	Ornellas	Uluwehi
Marple	Puanani	Molitu	Kapono`ai	Ostertus	Hoku
Marrotte	Karla	Moniz	Jaymie	Otsu	Clara
Martin	Martha E.	Montalvo	Yvette	Paahana-Lake	Shirley
Martin	Joan	Montira	Gary	Pacheco, Sr.	Stanley James
Martin	Makana	Morrison	Pua	Pagaduan	Michelle
Martinson	Lawrence	Muecher	Miriam	Page	Charles
Matsumoto	Amy	Murata	Akiyo	Paladin	Ginger
McBride	Dolores	Muromoto	Liane	Pali	Pikake
McCarty	Vicki	Nae`ole	Joshua	Palmeira	Chris
McDuff	Kathleen	Naeole	Danileigh Kahealani	Pamat	Mark
McKeown	Thomas	Nahoopii	Michael	Pang	Chadwick
McLean	Glenn	Nakagawa	Layne	Papaia	Elizabeth
McLean	Iliahi	Nakagawa	Melissa	Pardillo	Jobelle
McLean	Luke	Nakamoto	Ian	Parker	Alvin
McLinden	Michelle	Nakamura	Rachel	Parker	Lapree Pua`olena
Medeiros	Art	Nakamura	Wilma	Parker	Scott
Mederiros	Ashley	Nakoa	Noelani	Pasco	Ke`ala

Last Name	First Name	Last Name	First Name	Last Name	First Name
Pascual	Cyrila	Ritte-Camara	Starr	Slate	Isaiah
Patrick	Katherine	Rivera	Isabelle	Smith	Deborha
Paul	Anne	Robinson	Curtis	Sneed	Margaret
Peck	Shannon	Robinson	Kelly	Soriano	Cody
Perny	Deandra	Rogers	Sandra	Sousa	Keoki
Perrerira	Hulali	Romanchak	Abigail	Souza	Jonah
Peterson	Leah	Romanchak	Ethan	Souza	Kennethy
Pittman	Lea	Romanchak	Wendy	Souza	Michael
Pitzer	Frances	Roush	Stephen	Speed	Lihinoe
Plunkett	Kona	Rozel	Kia`aina	Stice	Brianna
Plunkett	Leilani	Ruhnau	Hanne	Stokesberry	Mele
Ponce	Cecelia	Rust-Sipili	Toni	Straatmann	Maria
Ponce	Maile	Ryan	Kaina	Subega	Mikiala
Porter	Nicholas	Ryder	Frank	Subiono	Anna
Potler-Dunpop	Julie	Ryder	Miriam	Suda	Ronnelle
Pratt	Abigail	Saffery	Maya	Summers	Ka`ohu
Prest	Ikaika	Sagadraca	Kahiaikapili	Suzuki	Shawn
Puaa-Freitas	Kaulana	Saiki	Molly	Sylva	Cheyenne
Pule	Thomas	Saito	Robert	Taasan	Koanani
Purdy	Kaimana	Sakamoto-Ribao	Courtnee	Tabisola	Allen
Purugganan	Frank	Salzer	Paul	Tabosa	Laycie Ann
Purugganan	Leone	Sandi	Sasha	Tachera	Cherilyn
Pyle	Laura	Savaki-Kashiwa	Dawn	Tada	Robert
Quenga	`Ulili	Scattergood	Hakem	Tagalan	Monica Ku`uliekaimana
Quinto	Hannah	Schaff	R. Lavender	Takahashi	Kazihisa
Raisbeck	Sarah	Schamber	Dean	Takamoto	Courtney
Ralan	Derrick	Scott	Linda	Talon	Konrad
Ramos	Glenda	Sebstad	Jeanene	Tanida	Aki
Randall	Brent	Seelbach	Tanda	Taua	Hokuloa
Range	Kealoa	Shaffer	Tracy	Taua	Rainee
Ranney	Keith	Sheppard	Earl	Tavares	Helen
Rano	Illegible	Shibano	Linda	Taylor	Miki`ala
Raymond	Kala	Shigematsu	Kikue	Teves	Pilialoha
Reader	Carla	Shim	Ramiah	Thoma	Marie
Redwell	Ronald	Silva	Jeffrey	Thomas	Kimberly
Reeser	Donald	Simon	Andie	Tihada	Kahikina
Reid	Joy	Skaff	Joshua	Tinsley	Jazmin
Riga	Lanakila	Skowronski	Francis	Toll	Rachel

Last Name	First Name	Last Name	First Name	Last Name	First Name
Tome	Louise	Villiers	Sara	Wong	Justine-Marie
Tsutsui	Ayako	Wailani Farm		Wong	Kalani
Turrieta	Gregory	Wainui	Taiva	Wong	Mathew Kainoa
Urquijo	Eva	Walden	Linda	Wood	Debra-Jean
Uyehara-Keliieka	Ha'aheo	Walin	Janice	Wood	Paul
Valle	Cassie	Wallace	Jodi	Woolsey	Hope
Vallente	Coral	Watson	Jesse	Wright	Chelsea
Van Ambrugh	Todd	Welker	Briana	Wright	Leipualokelani
Van Buren	Chelsie Ann	Wicklund	Cheryl	Wright	Palani
VanHoose	Don	Wikker	Susan	Wyroster	Evy
Vargas	Daniel	Wilder	Kathryn	Yamamura	Cheryl
Varholak-Madani	Laurie	Williams	Elizabeth	Yasalk	Kuakea
Ventura	Daphne	Williams	Ronald	Yonemura	Lloyd
Verbena	Melissa	Williams	Steven Kapena	Yonemura	Satoshi
Verzoga	Paulino	Wilson	Dee	Yoshida	Rosalie
Viernes	Darlene	Wilson	Janelle	Yoshioka	Melissa
Viernes	Kayla	Wilson	John	Zane	Kuhao
Villa	Alex	Wilson	Sabrina	Zimmer	Ute
Villanueva	Mililani	Wittler	Rosario	Zwick	Kathie
Villanueva, Jr.	Catalino	Wong	Donovan		

Table B- 2. Petition Supporting "No Action" Alternative with Request to Become a Consulting Party.

Last Name	First Name	Last Name	First Name	Last Name	First Name
Agalerai	Melinda	Gibson	Lehua	Morando	Po'ouioakaohuaino "Ohua"
Ahue	Cliff Pali	Heintz	Heather	Murray	Heather Ku'ulei Makamae
Ampong	Paulette "Leihua"	Helm	Mikahala	Oliveira	Katrina
Bailey	Gordean	Hokoana	Lui	Orme	Maile
Baker	Chris	Ishikawa	Lei	Pulama-Collier	Wanda S.
Barnard Ki'inani o Kalani	Christy	Ka'auwai	Kristen	Rabold	Jeanne
Bass	Ron	Kailihou	Clara-Leen	Rasmussen	Lena
Benz	Kylie	Kaina	DeAnn	Ryder	Leiohu
Biga	Jordan	Kanoa	Beverly-Ann	Sampson	Rina
Boteilho	Rose	Kaohu	Kathy	Souza	Eula
Bulawan	Mary Frances M.	Karratti	Margaret	Subiono	David Kea
Bulawan, Sr.	Bernard	Kerr	Cheryl	Thongtrakul	Leimomi
Callo	Kiana	Kneubuhl	Alesa, Buzzy, and Robyn	Thyne	Jacquelynn
Chock	April	Lee	Gordon	Tsuha	JoAnna, Kawaiokeolalani, and Mark
Delapinia	Kaulana	Makanani	Attwood M.	Whittle- Wagner	Jamie Moanikeala
Edwards	Dylan	Miller	Ane	Wong	Annette
Escobar, Jr.	Sharon and Fausto	Miller	Chuck and Terry	Wong	Kerry
Gerard	Sheila	Mirkovich	Sincerity	Wong	Newton and Jodean

Appendix C E-Mail and Letter Responses to Current Study Mail-Out Inquiries

Colleen Dagan

From: Brian Jenkins [lawmaui@maui.net]
Sent: Thursday, March 08, 2007 4:03 PM
To: cdagan@culturalsurveys.com
Subject: SPAM-LOW: Supp. Cultural Impact Assessment for Proposed ATST at Haleakala High Altitude Observatory Site

Dear Ms. Dagan:

Thank you for your letter dated February 13, 2007.

The concerns regarding the large ATST facility at the Haleakala High Altitude Site relate to two separate impacts: 1) visual and 2) the impact on access to the upper Skyline Trail trailhead.

As someone who was born and raised here on Maui and whose father and grandfather lived on Maui, I am familiar with many of the local traditions concerning the summit area. Since I was a child, I have hiked and hunted in this area (by which I mean the entire area around the proposed site) and know and count as friends many others who have hiked and hunted in this area. These traditions are hunting and hiking and just finding a quiet, pure, pristine place in the wilderness to be alone with one's thoughts. One of the favorite hunting areas is the former Kahikinui Forest Reserve which is now partially managed by the Kahikinui Game and Land Management Ohana with permission from Hawaiian Homes. The appeal of this area is its pristine wilderness character. Being there is a chance to see the upper native forest in a mostly intact condition. While some of the existing observatories are visible from the upper Kahikinui area, they are nothing compared to the proposed 14 story gleaming white colossus that is planned in connection with the ATST. The visual blight that is sought to be built will have a tremendous negative impact on that sense of wilderness that is currently enjoyed. This negative visual impact will also affect much of the Skyline Trail and views from the Upper Waiohuli Trail in the Kula Forest Reserve.

The second major concern is the impact of the increased development at the high altitude site. As the high altitude site becomes more developed with facilities that may have national security or advanced scientific applications, there will be a tendency by the operating managers to want to keep the public as far away from the facilities as possible. Currently, there is already a sign at the newly constructed green cattle guard that is located at the beginning of the road that provides the sole access to the upper Skyline Trail trailhead that warns people that they will be prosecuted if they travel on the road. While this sign is widely ignored and there have been no known arrests or prosecutions, there is good reason to believe that there will be a push for increased security during and subsequent to the construction of the proposed ATST. Access to the Skyline Trail is a cultural tradition and one of the favorite hiking and hunting areas of local people. Many times, it would be coordinated so that a hunter or hiker would be dropped off at the upper trailhead and he or she would be met by family or friends at the lower of the two gates on Skyline Trail after a day of slowly walking down from the top. Due to the high elevation, steep terrain and loose cinder conditions, it is a difficult hike to access the upper areas from the lower gate. If access were lost to the Upper trailhead, many local hunters and hikers (especially older ones) would effectively be barred from a favorite area. The game in this upper area are game birds such as

Chucker and Pheasant as well as goats and pigs. The purpose of hunting in this area is sustenance and feathers. Feathers, especially pheasant feathers, are prized for the making of hat bands.

Thank you for the opportunity to provide input to your Cultural Survey.

Brian R. Jenkins, President
Friends of Polipoli
P.O. Box 431
Wailuku, Hawaii 96793

Page 1 of 2

Colleen Dagan

From: Alan Kaufman, DVM, R(B), ABR, CRS, GRI [kaufman@maui.net]
Sent: Tuesday, March 13, 2007 5:32 PM
To: 'Colleen Dagan'
Subject: SPAM-LOW: RE:

Colleen,
I am sending your request to the KCA Board for members to respond as individuals.

My individual response:

"I have used the mountain for recreation. My older children have joined me on overnights in the crater. I take visiting guests to the summit two or fewer times per year. My youngest son is part Hawaiian and I take him to the ahu at the summit so as he grows he will have memories that give him a sense of place and belonging.

Regards,
Alan

Alan Kaufman, DVM
Realtor(B), ABR, CRS, GRI

University of Hawai'i

MAUI COMMUNITY COLLEGE

MĀHELE HAWAI'I - HAWAIIAN STUDIES

30 March 2007

Ms. Colleen Dagan

Archeologist-Cultural Surveys Hawai'i, Inc.

16 S. Market Street, Suite 2N

Wailuku, HI 96793

Mahalo for the opportunity to provide input for the Supplemental Cultural Impact Assessment for the Proposed Advanced Technology Solar Telescope (ATST) at the Haleakalā High Altitude Observatory Site, Papa'anui Ahupua'a, Makawao District, Island of Maui, TMK (2) 2-2-007: por. 008

The Hawaiian Studies Department at Maui Community College is opposed to the proposed ATST because it would be a desecration of Haleakalā on Maui, one of the most sacred and spiritual places of Hawai'i. The approximately 14-story tall ATST structure would have a negative impact through the disturbance, alteration and removal of sacred natural resources (i.e. soil, rocks) and possible cultural artifacts. A significant cumulative consequence of the proposed development would be the adverse and devastating visual effect caused by the addition of this intrusive and culturally inappropriate structure.

Me ka mahalo,

Kiope Raymond

Chair, Hawaiian Studies

310 Ka'ahumanu Avenue, Kahului, HI 96732
Telephone: (808) 984-3370, Facsimile: (808) 244-3228, <http://mauicc.hawaii.edu>
An Equal Opportunity/Affirmative Action Institution

30 March 2007

Ms. Colleen Dagan
Archeologist-Cultural Surveys Hawai'i
16 S. Market St., Suite 2N
Wailuku, HI 96793

Aloha Colleen,

I would like to have the following inserted into the Supplemental Cultural Impact Assessment for the proposed Advanced Technology Solar Telescope.

The entry sign to Kolekole (see page 59 of E Mālama Mau Ka La'a) has engraved, in Hawaiian, the words:

"I na 'ōiwi Hawai'i aloha 'āina
E kipa mai!"

As one who can translate Hawaiian, I understand the inscription to literally invite land-loving native Hawaiians to visit. However, I believe the intent is to allow any Hawaiian who wishes to access the shrines - to pay respects to ancestors or engage in religious practices - to do so.

Unfortunately, without the English translation to the words, any Hawaiian who might wish to access the two shrines - but could not translate the Hawaiian language to English - would not know they were being welcomed to access the altars. There is ample evidence to show that the vast majority of Hawaiians cannot read the Hawaiian language. They are being unnecessarily kept from entry. I base this on the fact that the signs above and below the one in Hawaiian address authorized entry only and the prohibition of recreational activities. What is a Hawaiian who cannot translate Hawaiian to think? They would think - I should not enter - of course!

An English translation must be provided on the entry sign so that Hawaiians know - in both Hawaiian and English - that they can enter. They are welcomed to enter. It is wrong to proceed on deliberations of the impact on cultural practices, or come to any conclusions regarding current usage of the Kolekole area as a spiritual and/or Hawaiian religious site for the 21st century without providing the Hawaiian and non-Hawaiian public full disclosure about who can access; and for what purposes.

Mahalo,

Ki'ope Raymond
740 Copp Road
Kula, HI 96790

30 March 2007

Ms. Colleen Dagan
Archeologist - Cultural Surveys Hawaii, Inc.
16 S. Market St. Suite 2N
Wailuku, HI 96793

Alohs Colleen,

The following quotes are from four students in the Spring 2007 Hawaiian Studies 262 course. Please include them in the Supplemental Cultural Impact Statement being prepared for the proposed Advanced Technology Solar Telescope.

"I was born and raised on the island of Maui and I have Hawaiian ancestry from Kahakuloa. I currently attend Maui Community College, and hope to pursue a career in science focused on environmental conservation. I oppose the proposed ATST because of the negative cultural and environmental impact it will have on Maui. Haleakala has been a spiritual summit for Hawaiians for over a thousand years. Stories, songs, and traditions of origins from long ago show how deep the spiritual roots of Maui's native people go in reverence for Haleakala. To build a 14-story tall building at the peak of Maui will send a clear message to our community that astronomical scientists have a willful disregard for Hawaiian culture and the values of our community. There are also environmental consequences to this project. The only sea bird to be on the endangered species list, *Pterodroma phaeopygia* depends on Haleakala's landscape for its delicate burrows, which may be adversely impacted by the heavy earth shattering construction of the ATST. Is this project worth the destruction of a species, to me it is not. Scientists claim this project will help to better understand the sun, I am not against good science, but I don't think good science should threaten a species and offend the host culture. To me, that is not good science. I ask that you choose to avoid Haleakala as the site for your telescope, please do not choose a site that is sacred to native people. By disregarding native sovereignty, you are compelling ever-changing forms of colonialism."

Cheyenne Sylva

"I am a Hawaiian student currently enrolled at M.C.C. and I oppose the proposed ATST. The Hawaiian people have suffered more than it seems like you folks know. If you understood the Hawaiian people and our history, you would know that asking to build a four-teen story building on one of our sacred mountains is extremely insulting. These scientists only care about their work, not about this land and its people's culture. Haleakala caters to tourists every single day. People ride through there with their cars, bicycles, and horses with no understanding of what type of place there is. Our mountain is not an amusement park for the tourist like the rest of the lands. It is a sacred place for everybody and you have no right to do this. This is another selfish act of the Hawaiian people. Foreigners have come here and built their ugly buildings on our beautiful land with no thought of how they could have built buildings that would flow with the natural surroundings and now you folks want to build the ugliest of them all on top of our mountain! Who do you think you are? Go back to your home and go to your church, cemetery or whatever is a sacred area to your family and build your telescope there! Too bad for you guys that Hawaii is in the prime area for this project, we as the people of this land say NO! NO WE DON'T WANT IT! So try to understand our words! Because we speak on behalf of our kupuna and our children."

Walter Kozik

"How many more times do the indigenous peoples of the world have to face the hungry eye of Science and watch, powerless, as it's great mouth devours those places and beliefs that make up the identity of the people themselves? And all of this in the name of increasing knowledge. Unfortunately and perhaps most ironically, Science fails to include the ancient and tested knowledge that lay within the indigenous viewpoint. For all of its equivocal non-bias, the empirical slant of Science is painfully obvious. Seeking a unified theory of all, Science misses the point completely. To the indigenous person it is clear that this mandate to conquer the Universe with our own technology and to own all knowledge is wholly imparted to the Scientist by means of Western Culture itself. The Westerner is given the mandate to conquer by the Bible itself. All beings and the Earth in its entirety are subject to the dominion of Mankind. Therefore, all things of the Earth are destined to be in the control of (the Western) Man. This Manifest Destiny has led to the annihilation or assimilation of countless Indigenous Cultures, all of who were seen as "primitive" and "ignorant". This tragedy has not ceased. Today, with no land left undiscovered, the new terrain of choice for colonization is our minds themselves. Science and the Westerner would have us chain all of our thoughts to their perspective while denying our heritage and culture. This Conditioning, this remaking of the World to fit the Dominant Paradigm View is the disease of the Westerner. Perhaps, before all alternative views are lost and all societies become homogenous, some Scientist somewhere will "realize" the scientific value of indigenous beliefs. Until then, we who are outside of the technocracy can only hope and continue to pray in the manner that our ancestors have kept for us."

Kathleen Zwick

"I am currently a student at Maui Community College and a resident of Hawaii. Although I am not a native Hawaiian, I can see that the ATST will have considerable impact on the people here. One does not need to be a native Hawaiian to see and feel the impact that this telescope will have. The biological impact will be horrendous. Hawaii is the one place on the planet with the most endangered species. Because of the remote location of the islands, there are species found here that are not found anywhere else. Hawaii has the dubious honour of being the endangered species capital of the world. Hawaii has only 0.2 percent of the landmass of the United States, but 75 percent of the country's plant and bird extinctions are of Hawaiian species. According to your survey, Appendix E, Botanical Survey 2005, *"Areas of both sites where construction has occurred generally show signs of disturbance by heavy machinery, support fewer native species, and contain more weeds."* Certainly, as scientists, you must see the potential devastating environmental impact that this could have on all of our futures. October 1, 2006, as reported in the Maui News: *"Haleakala National Park Superintendent Marilyn Parris said the park opposes a proposed solar telescope on the sensitive Haleakala summit and called a draft environmental impact statement on the project inadequate."*

Within your own statement, Haleakala was the only site that is a sacred site, and yet it was chosen to be the recipient of the ATST. By placing this telescope on the sacred site, you are turning a blind eye to both the culture and voice of the people of Hawaii, as well as condemning endangered species to an untimely death. According to your own records, the expected lifetime of the ATST will be 30 – 40 years. The expected lifetime of the changes to the landscape and the cultural aspects of Haleakala will be forever. Within your records, you state, "... no single site may exist that provides all of the desired characteristics... trade offs will be performed within the site selection process and will be based on science priorities and feasibility considerations." It appears to me that you have chosen the worst possible site for the ATST. You have chosen the site that will have the most devastating impact on both the environment of the land and the cultural of the Hawaiian People. What we do to one, we do to all. The world has become a global village, and the impact to Haleakala will, in time, impact the world. I am imploring you to rethink the ATST site. Why continue with the one site that will have the most devastating impact on our future world?"

Mahalo,

Kiope Raymond

Page 1 of 3

Colleen Dagan

From: Hinano.R.Rodrigues@hawaii.gov
Sent: Thursday, March 22, 2007 11:33 AM
To: Colleen Dagan
Subject: RE: Supplemental Cultural Impact Assessment (SCIA) for the proposed ATST

Aloha e Colleen:

Thank you for the opportunity to comment on this project.

While most will view the existence of cultural and archaeological features at a specific site as an indication of cultural importance, nothing can be further from the truth. Rather, sometimes the absence of any tangible cultural and archaeological feature is a manifestation of the importance and sacredness of the area. Haleakala is one of those areas.

Cultural and religiously speaking, places of high elevation and isolation have always been considered as wao akua, forests or place of the gods. Obviously Haleakala is a wao akua. That is the reason why you can only find a limited number of cultural or archaeological features. The very presence of any man-made structure takes away this sacredness. Especially a structure so pronounced as the ATST.

Granted, there already exists man-made structures at the site today. And some may argue that another structure may make only a small difference. I believe there is correlation between quantity and quality. In other words, another structure will, by quantification, affect the quality of the sacredness. Haleakala must be kept sacred by restricting the development of the crater area. To many Kanaka Maoli, the very unobstructed view of the mauna itself, is a part of their daily religious observations. To allow any more construction at the crater site is tantamount to allowing a modern office building on the site of Iolani Palace.

Hope this is clear and helps in your SCIA.

Hinano Rodrigues
Cultural Historian
DLNR-State Historic Preservation Division-Maui
(808) 243-4640
(808) 243-5838 (fax)

