



National Solar Observatory  
Daniel K. Inouye Solar Telescope  
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**Conservation District Use Permit MA-11-04  
2018 Annual Report to Condition #7 of Permit  
Daniel K. Inouye Solar Telescope**

**Condition 7 of the Conservation District Use Permit (CDUP) for the Daniel K. Inouye Solar Telescope Project, formerly known as the Advanced Technology Solar Telescope (ATST) Project:**

"The applicant will follow the stipulations agreed upon in the Programmatic Agreement signed between the National Science Foundation, the National Park Service, the University of Hawai'i, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation. These include but are not limited to the establishment of a Native Hawaiian Working Group, the retention of a Cultural Specialist; reserving up to 2% of the total ATST usage time for Native Hawaiian scientists, when there are Native Hawaiians among the pool of qualified scientists; and providing support to an educational initiative addressing the intersection between Native Hawaiian culture and science. The applicant commits to continued mitigation of impacts on cultural resources on the Region of Impact (ROI). The applicant will provide a written annual report to the Board on the status of the implementation of the Programmatic Agreement, including: listing the proposed mitigations to impacts on cultural resources developed by the Native Hawaiian Working Group (NHWG); the response to those proposed mitigations by the signatory parties to the Programmatic Agreement; and, the implementation of any such mitigation measures by the University."

**Project Update**

The DKIST project began its seventh year of construction on December 3, 2018. Most of the focus for 2018 continued to be inside the building with the assembly completion of the telescope mount. Periodically, some outside work took place during 2018 toward completing the concrete apron around the S&O Building. The mirror and its components were successfully assembled during 2018. Instruments are still being manufactured and Integration, Testing, and Commissioning (ITC) conducted through 2018 will continue through 2019.

**Status of the Implementation of the Programmatic Agreement**

Pursuant to Condition 7 of the CDUP, the following summarizes the status of pertinent items under Section II- NSF's Area of Responsibility of the Programmatic Agreement (PA). These items are discussed as applicable during the NHWG meetings.

**1. PA Item II. A. Establishment of the DKIST Native Hawaiian Working Group**

The PA was fully executed on November 13, 2009. The NHWG first met on December 5, 2009, which was within 60 days of the fully executed date. The NHWG has conducted ongoing meetings, as shown below.



Operated by the Association of Universities for Research in Astronomy, Inc.  
under a cooperative agreement to the National Science Foundation



	<b>Date</b>	<b>Location</b>
1	Dec 5, 2009	University of Hawai'i, Institute for Astronomy (UH IfA) Maikalani Facility
2	Feb 20, 2010	UH IfA, Maikalani Facility
3	Sep 1, 2010	UH, Maui College, Laulima Room
4	Feb 28, 2011	Mayor Hannibal Tavares Community Center
5	Jun 15, 2011	Haliimaile Community Center. This meeting was a scheduled Section 106 meeting for the Supplemental Draft Environmental Assessment and provided another opportunity for the NHWG to meet.
6	Oct 24, 2011	Mayor Hannibal Tavares Community Center
7	Sep 17, 2012	Mayor Hannibal Tavares Community Center
8	Apr 3, 2013	UH IfA, Maikalani Facility
9	Feb 24, 2014	UH IfA, Maikalani Facility
10	Sep 22, 2014	UH IfA, Maikalani Facility
11	Mar 25, 2015	UH IfA, Maikalani Facility
12	Dec 21, 2015	WEBEX meeting. Note: Due to the threat of a potential government shut-down, a WEBEX meeting was scheduled to comply with the obligation of conducting two NHWG meetings per year.
13	Feb 23, 2016	Mayor Hannibal Tavares Community Center
14	Aug 24, 2016	Kula Community Center
15	Mar 1, 2017	UH Maui College, Class Act Restaurant
16	Nov 8, 2017	UH Maui College, Class Act Restaurant
17	Apr 19, 2018	UH Maui College, Class Act Restaurant
18	Oct 24, 2018	UH Maui College, Class Act Restaurant

Each scheduled meeting is initially announced in advance of a scheduled meeting via email from Caroline Blanco, National Science Foundation (NSF) Assistant General Counsel, with a reminder email also sent before the meeting. A sign-in sheet is provided at each meeting where participants have the opportunity to update contact information. Notifications and sign-in sheets are posted to the DKIST website.

## **2. PA Item II. B. Implementation of Best Management Practices**

DKIST construction activities commenced December 2, 2012. Best Management Practices, as outlined in the approved UH IfA Management Plan, were implemented on this day and continue to be implemented and monitored as required throughout the various stages of construction.

## **3. PA Item II. C. Naming of HO Roads - *PA Item Completed***

Based on what was communicated during the April 19, 2018 NHWG meeting by Native Hawaiians present, UH-IfA will no longer pursue the renaming of the road within HO. Specifically, it was communicated that naming the road at HO would be deemed "consent" to have DKIST built at HO and, therefore, the Native Hawaiians present at this meeting did not want to rename the road. In response, UH-IfA determined that it would respect those wishes and will not pursue the renaming of the road within HO pursuant to the PA.

**4. PA Item II. D. Retention of a Cultural Specialist - *PA Item Completed***

Kahu Dane Maxwell (CKM Cultural Resources, LLC) continues his role as the DKIST Cultural Specialist assuming all duties and responsibilities in upholding the protection of existing historic properties and their traditional cultural values during construction. During August 2016, the CKM scope of work was reduced, since outside activities were either completed or only conducted periodically. Kahu Maxwell continues to be in direct communication with the DKIST Site Construction Manager and is informed if outside construction activities are to be scheduled. A CKM cultural monitor is then deployed on site to monitor activities.

**5. PA Item II. E. Decommissioning of the ATST.**

Not applicable at this time.

**6. PA Item II. F. Possible Repainting**

DKIST continues to make efforts to pursue possibilities of new technologies with respect to reassessing technological options for new types of coatings, more efficient cooling methods, or improved compensation for thermal turbulence, which may allow the facility enclosure and buildings to be painted a color other than white to make the structures less noticeable. The current status was that a research chemist from DuPont is working on color paint with the same properties as white; however, any significant proof of concept is still years away.

**7. PA Item II. G. Removal of Unused Facilities at HO - *PA Item Completed***

Telephone poles were removed in 2013. As construction continues, if other remnants are found, the project will consult with Kahu Maxwell for proper removal.

**8. PA Item II. H. Removal of Reber Circle Site #50-50-11-5443 - *PA Item Completed***

The Reber Circle concrete ring was removed on December 3, 2012.

**9. PA Item II. I. Hawaiian Star Compass - *PA Item Completed***

Based on what was communicated during the April 19, 2018 meeting by Native Hawaiians present, NSF, AURA/NSO, and UH-IfA will no longer pursue placing a Hawaiian star compass at the summit. Specifically, it was communicated that placing a Hawaiian star compass at the summit would signify “consent” to have DKIST built at HO and, therefore, the Native Hawaiians present at the last NHWG meeting expressed their wish to not have a Hawaiian star compass placed at the summit. In response, NSF, AURA/NSO, and UH IfA determined that it would respect those wishes and will not pursue further the placing of a Hawaiian star compass at the summit pursuant to the PA.

**10. PA Item II. J. Required “Sense of Place” Training**

All DKIST Project personnel, contractors/sub-contractors, and project vendors continue to attend “Sense of Place” training prior to working within HO. To date, approximately 400 people have participated in these training sessions. UH IfA has been provided copies of attendee acknowledgement sheets.

**11. PA Item II. K. Exterior Design**

During the April 19, 2018 meeting, Kahu Maxwell suggested using existing rocks/boulders to serve as artwork near the facility. Since then, Mark Warner, DKIST Project Manager, and Kahu Maxwell met at the summit to further discuss placement location and ideas.

**12. PA Item II. L. Possible Shelter for Cultural Practitioners - *PA Item Completed***

During the October 24, 2018 meeting, the DKIST project established a location for a shelter for cultural practitioners.

**13. PA Item II. M. State Road 378**

At the April 3, 2013 NHWG meeting, Dr. Charlie Fein of KC Environmental reported that the State Highway 378 Historic Evaluation Report identifying and photographing Contributing Features of historic significance along the roadway consisting of 10.1 miles from the Crater Road junction to the Haleakalā National Park entrance was sent to the National Park Service Regional office for submission to the Library of Congress on April 30<sup>th</sup>. An acceptance letter from NPS was received on November 21, 2013, confirming the documents were transmitted to the Library of Congress. Contributing features will be documented again after construction.

**14. PA Item II. N. Acknowledgment of Significance of Haleakalā and NSF's Gratitude – *PA Item Completed***

During the February 24, 2014 NHWG meeting, it was suggested that it would be a sign of respect to Native Hawaiians if the acknowledgment did not include any language referencing either the spiritual and cultural significance of the location of the DKIST or NSF's gratitude for using the site. Specifically, it was suggested that the following language be used:

"The research reported herein is based in part on data collected with the Daniel K. Inouye Solar Telescope (DKIST), a facility of the National Solar Observatory (NSO). NSO is funded by the National Science Foundation under a cooperative agreement with the Association of Universities for Research in Astronomy, Inc. "

NSF and AURA/NSO provided (via email on 3/25/14) an opportunity for everyone in the NHWG to comment on the above draft language. A comment period was opened up to and including Wed., April 30, 2014, in which members of the NHWG could submit comments on the latest version (above) of the suggested language. Those interested in submitting comments on the draft language were asked to submit an email to Caroline Blanco at NSF no later than midnight (Hawaiian Standard Time) on Wed., April 30, 2014. At the close of the comment period, NSF and AURA/NSO conferred and, based on all comments received during the NHWG meetings and during the comment period, finalized the above language.

During the September 22, 2014 meeting, the language was again read and discussed. NSF made another request for comments and none were expressed. It was agreed at the meeting that the language above would become the acknowledgement and this PA item would now be considered COMPLETED.

**15. PA Item II. O. Status of Implementation of this PA Reported on Project Website**

The “Status of Implementation of Programmatic Agreement” is available on the Internet at: <http://atst.nso.edu/node/747>.

**Additional Items Listed in Condition 7 of the CDUP**

- 1. Reserving up to 2% of the total DKIST usage time for Native Hawaiian scientists, when there are Native Hawaiians among the pool of qualified scientists.**

Not applicable at this time.

- 2. Providing support to an educational initiative addressing the intersection between Native Hawaiian culture and science.**

The Division of Astronomical Sciences of the National Science Foundation continues annual funding of a ten-year, \$20M award to the University of Hawaii Maui College (UHMC). To date, \$16M has been awarded to UHMC. The award is being funded, contingent upon the availability of appropriations, at a rate of \$2M annually and is being used to establish and fund programs to address the intersection of Native Hawaiian culture and science, technology, engineering and mathematics. Recruitment for student participants continues under the direction of the UHMC Director for the program. The Director continues to implement and develop the details of the program that involve student stipends, mentoring, internships, as well as training in Native Hawaiian culture.

- 3. Proposed mitigations to impacts on cultural resources developed by the NHWG and the response to those proposed mitigations by the signatory parties to the Programmatic Agreement the implementation of any such mitigation measures by the University.**

The role of the DKIST NHWG is to provide consultation concerning historic property matters related to the construction and operation of the DKIST Project. The NHWG meeting minutes are summarized and posted to the “Status of Implementation of Programmatic Agreement” web page is available on the Internet at: <http://atst.nso.edu/node/747>.